DOES NOT CIRCULATE

UNIVERSITY OF MICHIGAN
NOV 24 1958
MEDICAL LIBRARY

The Journal of The SOUTH CAROLINA Medical Association

VOLUME LIV NOVEMBER, 1958 NUMBER 11

CONTENTS

The Optimal Dose of Digitalis ..... J. A. Boone
Metabolic Acidosis with Kaliopenic Nephropathy ..... R. R. Bradham and C. McC. Smythe
Problems of Big Breasts ..... R. F. Hagerty and Forde McIver
Sodium Content of Water Supplies ..... K. R. Bailey

MEDICAL COLLEGE CLINICS

Digitalis Effects ..... Dale Groom
Acoustic Neuroma ..... O. R. Talbert

SPECIAL ARTICLES

Physical Fitness of School Age Child ..... H. W. Moore
Physicians Role in Disability Program ..... P. G. Sherer

Lilly
QUALITY RESEARCH INTEGRITY

NEW

Speed patient recovery . . .
help meet increased nutritional demands

MI-CEBRIN T®

WITH B_{12} ABSORPTION BOOSTER

the extended-range therapeutic
vitamin-mineral tablet

Available in bottles of 30 and 100
at pharmacies everywhere

MI-CEBRIN T® (vitamin-minerals therapeutic, Lilly)

ELI LILLY AND COMPANY, INDIANAPOLIS 6, INDIANA, U.S.A. 808340

TYPICAL IMFERON RESPONSES

Imferon®

INTRAMUSCULAR IRON-DEXTRAN COMPLEX

CHRONIC BLOOD LOSS:

"...this patient did not receive any transfusion of blood or any hematinic other than the intramuscular dose of iron. His initial concentration of hemoglobin measured 5.8 gm. per 100 cc. of blood and in spite of operation [hemorrhoidectomy] and further loss of blood the concentration increased to 12.2 gm. within less than 3 weeks. Concomitantly with the hematologic improvement there was clinical improvement and subsidence of the initial primary symptoms [unusual fatigability, dyspnea, palpitation on exertion]."[1]

INTOLERANCE TO ORAL IRON:

"...she had an excellent response with a reticulocyte peak of 5.3 per cent on the seventh day, and a complete disappearance of the anemia and conversion from hypochromic to normochromic cells by the end of two months. She experienced remarkable improvement in pep and sense of well-being coincident with the alleviation of her anemia."[2]

(1) Hagedorn, A. B.: Proc. Staff Meet. Mayo Clin. 32:705 (Dec. 11) 1957.
(2) Best, W. R.; Louis, J., and Limarzi, L. R.: M. Clin. North America (Jan.) 1958, p. 3.

Supplied: 2-cc. and 5-cc. ampuls, boxes of 4. Physician's directions in every box. There are 50 mg. of elemental iron per cc. Request brochure NDA 17, Imferon.

IMFERON® is distributed by Lakeside Laboratories, Inc., under license from Benger Laboratories, Limited.

LAKESIDE

The Journal
of the
South Carolina Medical Association

VOLUME LIV November, 1958 NUMBER 11

THE OPTIMAL DOSE OF DIGITALIS

JOHN A. BOONE, M. D., F.A.C.P.*

Nearly twenty years ago I read a paper on "Modern Usage of Digitalis" before the First District Medical Society in Walterboro, which was subsequently published in this journal.[1] If I were writing an article on the general subject today, I would hardly change a word of that thumbnail sketch.

Experience in the past twenty years, nevertheless, has convinced me that digitalis, in spite of being one of the oldest useful drugs we have, is still probably the most improperly administered one of all. This is, I think, a result of two factors: the failure of many physicians to realize how necessary it is to individualize both the initial dose and the maintenance dose for each patient, and the fact that the endpoint of proper dosage is often not a clear-cut sign, such as the disappearance of sugar in the urine when treating a diabetic patient with insulin.

That the wide variability in digitalis dosage requirements is not generally appreciated was emphasized recently by Levine and others.[2] They stated that ". . . the process of digitalization should be thought of as an individual biological titration". This is a modern and more scientific-sounding rephrasing of William Withering's original directions that the drug be given until the patient got better or developed signs of poisoning.[3] To quote from my own paper of twenty years ago: "With reference to the dosage of digitalis, the need for individualization in each patient cannot be too strongly emphasized. While in any one patient the required amount of digitalis varies somewhat in proportion to the degree of congestive failure, patients will vary a great deal among themselves as to the actual amount required to produce a given therapeutic effect".

The experience of twenty years has brought the observation that whereas the common error with the older preparations of digitalis leaf was underdosage, the newer purified, accurately standardized and potent glycosides have caused more bizarre pictures of digitalis poisoning than I ever saw before their introduction. Drug salesman promoting these newer preparations often claim they are less apt to produce nausea than the older whole leaf. This may be true in occasional cases and may be responsible for more frequent overdosage, but I have seen some patients who sustained marked loss of true body weight from the anorexia caused by chronic overdosage with the newer preparations.

I shall try to outline the rules for proper use of digitalis in common situations where it is indicated and illustrate these rules as far as practicable with summaries of actual cases.

Auricular Fibrillation

Auricular fibrillation is most commonly seen as an event in the course of organic heart disease, although it rarely occurs as a functional arrhythmia in normal persons and more frequently during the course of hyperthyroidism in persons with normal hearts. I have also seen it in paroxysmal form in several persons who had taken desiccated thyroid for years either

*Professor of Medicine, Medical College of South Carolina.
From the Department of Medicine, Medical College of South Carolina, and the Medical Service of the Medical College Hospital, Charleston, S. C.

for weight reduction or with a mistaken diagnosis of hypothyroidism. The onset of auricular fibrillation is usually accompanied by a rapid, inefficient ventricular beat, and frequently is the precipitating cause of congestive heart failure.

It is here that digitalis has its clearest indication and most spectacular effect, and proper dosage is most easily achieved. The drug is given rapidly in sufficient dosage to slow the ventricular rate to about 70 beats per minute at rest, and the maintenance dose is the amount that will keep it there. The improvement in the patient is spectacular because the drug is simultaneously exerting two beneficial effects: the ventricle is made to contract more efficiently, and the rapid, exhausting ventricular beat is slowed down by a certain small increase of the block at the auriculoventricular node. Fortunately, optimum effect in both these directions is usually had by the same dose of drug, so the ventricular rate can be used as a clear end-point for adjusting dosage.

To be accurate, counting the ventricular rate must be done after the patient has remained at rest for at least 15 minutes, and must be done by listening to the heart, rather than by counting the radial pulse (the weaker ventricular beats do not get through to the wrist, and a falsely low ventricular rate may be inferred). Moreover, the counting must be done by the doctor. Whatever their other sterling qualities may be, I have encountered relatively few nurses who were able to count accurately an irregular pulse, and of course, their training in auscultation is minimal.

There are some exceptions to the above simple rule that should be watched for and correctly interpreted. Some patients in severe failure may require what seems an inordinate dose of digitalis to bring the ventricular rate down to 70. As long as the rate is still grossly irregular but slowing down, one may be reassured that still more digitalis is needed, but one should have an electrocardiogram to make sure that the rhythm is still auricular fibrillation and has not changed to ventricular tachycardia or auricular tachycardia with block—both of which are grave manifestations of deep intoxication with digitalis.

An occasional heart may be observed to have become regular following a large dose of the drug. An electrocardiogram will then be necessary again to show whether the heart has simply reverted to a normal sinus rhythm, or has developed complete heart block with a relatively rapid ventricular rate from digitalis overdosage.

Occasionally it will be found that the ventricular rate in auricular fibrillation, rather than slowing with digitalization, becomes more rapid, perhaps with increase in ventricular premature beats, and even the nausea and visual disturbances of obvious digitalis toxicity may appear while the ventricular rate is still climbing. This train of events almost invariably means hyperthyroidism—and the latter may be so occult that diagnostic tests will fail to prove it. But the response to treatment of hyperthyroidism proves the diagnosis:

A 45 year old man with the Eisenmenger complex proved at cardiac catherization had developed auricular fibrillation and uncontrollable failure. Attempts to slow his very rapid ventricular rate with digitalis resulted only in the appearance of multiple ventricular extrasystoles and no slowing of rate or improvement in his failure. Repeated tests of I^{131} uptake and serum protein-bound iodine were within the normal range. Administration of propylthiouracil was followed by marked slowing of ventricular rate and decrease in failure. Ablation of the thyroid by I^{131} resulted in persisting ease of slowing of the ventricular rate with digitalis and the failure has since been easily controlled.

Once in a while a patient with auricular fibrillation will show a slow or not very fast ventricular rate before digitalis is given, because of a previously existing partial block at the auriculo-ventricular node. This may lead to either underdigitalization or overdigitalization:

A 78 year old lady at a routine examination had an electrocardiogram which showed a P-R interval of .24 second. Some two years later she developed early symptoms of congestive failure, and was found to be fibrillating, with a ventricular rate of 80. She was given 1.2 mg. of crystalline digitoxin (Purodigin), followed by 0.1 mg. daily. When I first saw her the ventricular rate was 50 per minute at rest. She complained of persistent anorexia which had reduced her weight 15 pounds below what she had ever been able to achieve by diet, and commented on pretty purple flowers in a field where her companion could see none. Her drug was stopped and after 10 days her

appetite returned and the ventricular rate had risen to 70 per minute. She has since been maintained *in statu quo* on 50 mg. of digitalis leaf daily. Although she was fibrillating, her heart had probably been protected from the exhaustion of a rapid rate by her "built-in block", but she happened to require just half the usual amount of digitalis, and had been well poisoned by the usual dose administered to such a patient.

A 40 year old man with mitral stenosis and auricular fibrillation was admitted to the hospital for operation on his mitral valve. He had been taking 0.1 Gm. of digitalis leaf for several years, and at rest his ventricular rate was 50 per minute. He was thought to be overdigitalized and digitalis was not given for two days before operation. Just before anesthesia was induced (but following the usual dose of preoperative atropine), I received a call to the operating room where the patient was found to have increased his ventricular rate to 120 per minute, though still fibrillating. After a total of 0.8 mg. of intravenous lanatoside-C, his ventricular rate slowed to 70 and operation proceded with a successful valvulotomy. When seen in the Heart Clinic one month after operation, he said he had taken no digitalis since discharge, and his ventricular rate was still grossly irregular at 50 per minute. Obviously, the man had a "built-in block" which operated to keep his ventricular rate down until abolished with preoperative atropine, and he had probably never been fully digitalized until the day of his operation.

A final warning is in order before depending on slowing of the ventricular rate as an endpoint in controlling auricular fibrillation with digitalis. It was stated above that the ventricular rate must be counted after a 15 minute rest, and also that frequently it could not be slowed with the drug in hyperthyroidism. This is because anything that increases the patient's metabolism will prevent his ventricular rate from slowing to 70 even with adequate dosage of digitalis. It must be remembered that infections will also increase the patient's metabolism, and care should be taken not to overdose those with auricular fibrillation who are concurrently suffering from pneumonia or other infections. This point is well illustrated in the case described in the section to follow.

Congestive Heart Failure With Regular Rhythm

It is in the group of patients who have congestive failure and normal sinus rhythm that proper dosage seems most often to elude the physician. Here one must depend on finding a dose short of producing toxic symptoms, yet sufficient to alleviate signs and symptoms of failure. On the *average*, the patient will be digitalized by one "cat unit" of digitalis preparation per ten pounds of body weight spread over one or two days, and the digitalization will be maintained by one cat unit daily thereafter. But the *average* dose will be tried on some patients for whom it is too much, and on many for whom it is inadequate.

I prefer when trying to determine a patient's digitalis requirement to delay the use of diuretics and sodium restriction wherever possible and to watch the patient's body weight, which will drop sharply from digitalis diuresis when the proper level is reached in his body. I first give him the average cat unit per ten pounds of body weight and stop to see whether he is showing toxic symptoms or whether his symptoms have improved.

If he is showing toxic symptoms, several possibilities should be considered:

(1) The diagnosis of congestive heart failure may have been incorrect.

(2) He may have been given digitalis recently without being aware of it.

(3) He may be one of those occasional individuals who require a smaller than normal dose. Further management will depend on which possibility is found to be correct. At this point it should be emphasized that when a patient has been made toxic with digitalis the dose should *not be reduced*, but the drug *stopped* until toxic symptoms have disappeared and then resumed in smaller dosage. The slow elimination of digitalis (averaging about 1 cat unit per day) will prolong unduly the toxic symptoms if the dose is merely reduced.

If the patient's dyspnea has improved and his body weight dropped through loss of edema, he may be assumed to be digitalized and thereafter placed on the average maintenance dose of one cat unit daily. He may need diuretics and sodium restriction to effect complete loss of edema, or not, and these may then be utilized if necessary. If the initial average dose is not followed by improvement in dyspnea and loss of weight, digitalis should be pushed further. This may be done by giving digitalis at the rate of three cat units daily

while observing the patient at least once daily, or if he can be observed closely in the hospital, at the rate of three cat units every four hours, examining him before each dose for evidence of improvement or toxicity. When full digitalization is achieved, the size of the probable maintenance dose can be then inferred from the relative amount required to achieve it. Further experience will prove whether this dose must be adjusted up or down, just as one would not turn a diabetic loose with an invariable dose of insulin. In the cardiac patient, the doctor's eyes, ears and horse sense must serve the same purpose as the diabetic's test of his urine for sugar.

Persistent anorexia and the appearance of an irregular heart beat are the most dependable symptoms of overdosage. But anorexia is a symptom that must be evaluated correctly in a patient who knows his heart is failing. And extrasystoles may occur in heart failure but be diminished or abolished by proper digitalization.

I shall terminate this discussion with the summary of a case of mine that over a period of years has been instructive to both myself and a number of my resident physicians in the paths and bypaths of managing a case of congestive heart failure as he slowly goes downhill.

A 56 year old man was referred to me in 1948 for treatment of severe congestive heart failure accompanied by auricular fibrillation. He had had a thoraco-lumbar sympathectomy a few years before for Buerger's disease. He had already received an unknown amount of digitoxin from his local physician. On examination he showed a moderately enlarged heart, auricular fibrillation with a ventricular rate of 110 per minute, pulmonary congestion and peripheral edema. He was given 0.4 mg. of digitoxin and the following morning his fibrillation had reverted to a normal sinus rhythm, his dyspnea had greatly improved and diuresis had begun. He was placed on 0.2 mg. of digitoxin daily and improvement steadily continued. On discharge a roentgenogram of his heart showed marked reduction in size. He returned for an office visit two months later. His improvement was maintained and the heart had returned to normal size by x-ray measurement.

On continuation of his digitoxin dose and limitation of physical activity he did well, with no further signs or symptoms of failure, for a period of seven years, when he had an attack of pulmonary edema following a little unusual physical activity. When placed in the hospital following this, he showed no changes except for a slight increase in heart size by roentgenogram. He was discharged on the same 0.2 mg. dose of digitoxin.

Again he did very well but was referred to me again eight months later because of a persistent cough following a virus infection. Slight further increase in heart size and a little pleural fluid were found. His digitalis dosage was increased slightly for two days and one dose of a mercurial diuretic was given, resulting in loss of five pounds in weight and clearing of his pleural fluid, and he was discharged, again on 0.2 mg. of digitoxin daily.

Three weeks later he was readmitted because of repeated attacks of paroxysmal nocturnal dyspnea. This time his digitoxin dosage was increased to 0.2 mg. three times daily for one week and then stabilized at 0.4 mg. and 0.2 mg. on alternate days. Pulmonary congestion cleared and his nocturnal dyspnea ceased, although no diuretics were given. His electrocardiogram on this dosage showed a slight degree of A-V conduction delay.

He did well on this regime for a period of eight months, when he "went through the clinic" at a medical center in another state. He was told there that he was taking too much digitalis and his dose was cut back to 0.2 mg. of digitoxin daily. Two weeks later he was again sent to us with a resumption of his attacks of paroxysmal nocturnal dyspnea and the appearance of edema of the ankles. On this occasion bilateral thoracentesis was necessary and 3,000 ml. of fluid were removed. He failed to respond to mercurial diuretics. Shortly after admission auricular fibrillation developed. Digitoxin was pushed until his resting ventricular rate reached 70, whereupon his edema cleared. He was discharged on 0.3 mg. of digitoxin daily and his physician was advised to adjust this as necessary to maintain a ventricular rate of about 70.

He was again seen here four months later with a chief complaint of persistent anorexia, nausea and vomiting. Some six weeks before, following an episode of viral pneumonitis, his pulse rate had increased, and in an attempt to control it he had been given 0.8 mg. of digitoxin daily for three weeks. He appeared to be in an excellent state of compensation, but the electrocardiogram showed auricular fibrillation with complete A-V dissociation and a rapid ventricular rate—a sign of severe digitalis toxicity. Withdrawal of all digitalis resulted in a few days in disappearance of the A-V dissociation and resumption of auricular fibrillation with a ventricular rate of 70. The nausea and vomiting similarly disappeared. It was then determined that maintaining a ventricular rate of 70 required a daily dose of 0.6 mg. of digitoxin. The patient has remained on the maintenance dose of 0.6 mg. of digitoxin at the present writing for nine months without symptoms or signs of either congestive failure or digitalis toxicity.

This patient illustrates the slowly increasing dosage of digitalis necessary to control congestive failure over a period of about 10 years in the same patient. Several of the common pitfalls are also illustrated. First, we were somewhat slow in recognizing that his dosage needed to be increased. Second, an erroneous diagnosis of digitalis toxicity was made at a famous medical center. Third, the ease of maintaining correct dosage after onset of auricular fibrillation is seen. Fourth, the effect of increased metabolism (fever) in speeding up his ventricular rate led to his only episode of digitalis poisoning. And fifth, he has lived for nine months in comfort on a daily dose of digitoxin (0.6 mg.) which many physicians would immediately label as out of all reason and poisonous. But for this man 0.8 mg. is poisonous, and 0.6 mg. is just right.

It is hoped that this discussion will be of some help to the physicians of South Carolina in determining the proper dosage of digitalis for their patients.

REFERENCES

1. Boone, J. A.: Modern usage of digitalis. J. South Carolina M. A. 35:8, 1939.
2. Craig, L. C., Lown, B. and Levine, S. A.: Resistance and sensitivity to digitalis. J.A.M.A. 166: 2139, 1958.
3. Withering, W.: An Account of the Foxglove. Birmingham, 1785.

METABOLIC ALKALOSIS WITH KALIOPENIC NEPHROPATHY

R. Randolph Bradham, M. D.* and Cheves McC. Smythe, M. D.**
Charleston, S. C.

Recently a young man was admitted to the Medical College Hospital with severe protracted vomiting secondary to pyloric obstruction. His case is presented as an unusual example of fluid, electrolyte, and acid-base imbalance with a discussion of the effect of these abnormalities on the kidney. The fluid volume deficit was as severe and the serum electrolyte concentrations were the lowest observed by us in a patient who survived. He demonstrated many of the signs and symptoms associated with metabolic alkalosis.

A 36 year old colored male, was admitted to the Medical College Hospital on April 2, 1958 because of pyloric obstruction. A duodenal ulcer had been demonstrated 17 years before (in 1941) by roentgenogram. Symptomatic response to diet, antacids, and methantheline bromide (Banthine) was good at that time. This program was followed intermittently, and the patient continued to get along well until 1950 when he entered the hospital for recurrence of symptoms and a minor hemorrhage requiring one blood transfusion. One month before the present admission, he began having abdominal pain, nausea, and vomiting. The vomiting was at first infrequent but progressed in frequency and severity. During the week before admission he retained nothing but continued to take fluids and ice cream, only to vomit them 30 to 60 minutes later. Epigastric cramping pains were persistent and not relieved by Banthine and antacids. He had not had a bowel movement in one week and had not voided for 24 hours before coming to the hospital. He had become extremely weak and dizzy.

On physical examination he was found to be a severely ill and dehydrated young man who had lost a great deal of weight. Skin turgor was poor, and the skin was warm and dry. Mucous membranes were dry. The eyes were moderately sunken. Peripheral veins filled poorly. Blood pressure was 100/80, pulse 100/min., and respirations 20/min. and shallow. The pupils reacted well to light. The abdomen was scaphoid and not tender. Peristalsis was present. No organs or masses were palpable. The sensorium was clouded and the patient was extremely weak. Muscle weakness was a prominent finding. Reflexes were markedly hypoactive.

Hematocrit on admission was 54%. No urine could be obtained for urinalysis. However, the urine showed 3+ albumin 36 hours later and 2+ three days after that. The blood urea nitrogen was 94 mg. per 100 ml., serum chloride 45.6 mEq/l., and CO_2 combining power 150 vols. per cent, (67.5 mEq/l). Sodium and potassium on the following morning were 131.8 mEq/l. and 2.56 mEq/l. respectively. These values were obtained following administration of solutions containing both of these electrolytes.

From the Departments of Surgery and Medicine, Medical College of South Carolina.
* Assistant Professor of Surgery.
** Assistant Professor of Medicine and John and Mary R. Markle Scholar in Medicine.

Table I
Laboratory Determinations

	April 2 8 P. M.	April 3 8 A. M.	April 3 7 P. M.	April 4 8 A. M.	April 4 8 P. M.	April 5	April 6	April 10
Cl (mEq/l)	45.6	54.1	54.1	74.3	99.7	104.8	103.1	108.2
Na+ (mEq/l)		131.8		121.8		144.3		156.5
K+ (mEq/l)		2.56		2.77		4.97		5.95
CO_2 (vols. %)	150		78	138	115	90	80	56
BUN (mg. %)	94			126		83	87	40
VPC (%)	54						33	34

The working diagnosis was duodenal ulcer with pyloric obstruction and severe hypochloremic, hypokalemic alkalosis associated with renal tubular damage secondary to potassium depletion (kaliopenic nephropathy). Subsequent serum electrolyte studies are given in Table I.

Course of Therapy

The severity of the deficits of intracellular and extracellular fluid volume and electrolytes was obvious on admission. It was equally apparent that administration of electrolytes would probably not raise the serum values initially until some of the total body deficiencies were corrected.

Fluids and electrolytes during the first 24 hours in order given were as follows:

	Na	Cl	K
2000 ml. 5% dextrose in 0.9% NaCl.	308	308	
1000 ml. 10% dextrose in DW with 40 mEq. KCl			40
1000 ml. Lactated Ringer's solution	130	109	4
1000 ml. 10% dextrose with 40 mEq. KCl			40
1000 ml. Lactated Ringer's	130	109	4
1000 ml. Lactated Ringer's with 80 mEq. KCl	130	109	84
300 ml. 3% NaCl.	165	165	
7300 ml. Totals	863	800	172

There was some hesitation about administering large quantities of potassium initially although it was suspected that a large potassium deficit existed. The anuria was believed to be on the basis of dehydration but could well have been on the basis of renal damage caused by electrolyte imbalance. Fortyfour mEq. of K+ were actually given before urine flow began as the patient continued to be anuric until the fifth liter was being infused. At the end of 24 hours volume replacement was adequate but electrolyte deficits, although improved, were still large. The patient became more responsive and his sensorium began to clear. Muscle weakness and hyporeflexia were still present. The blood pressure had improved to 156/85. Pulse remained 112/minute.

During the second and third 24 hour periods the following electrolyte solutions were given. He was begun on small amounts of milk on the third day.

By reference to table I, it can be seen that at the end of 72 hours electrolyte balance was being accomplished and the next morning, serum electrolyte determinations indicated that circulating deficits had been replaced. However, the high CO_2 combining power of 90 vol. per cent indicated that the patient was still alkalotic and that even though serum potassium was normal, tissue deficits of this cation might still be present. The patient appeared well hydrated and his general physical condition improved rapidly. The sensorium cleared, and he was able to sit up on the side of the bed without help.

The pyloric obstruction persisted. His course was further complicated by bilateral thrombophlebitis of the lower extremities. In spite of the patient's condition, the pyloric obstruction had to be relieved so that he could begin oral nourishment. Gastroenterostomy was elected, because it was the simplest and shortest procedure which could be done in this debilitated patient. This was carried out without difficulty on the eighth hospital day. Oral intake was begun on the third postoperative day and the diet progressed to six feeding bland diet. Recovery was rapid and he was discharged on the ninth postoperative (17th hospital day) day. Weight gain was rapid following discharge and he returned to work three weeks after the gastro-enterostomy had been done.

Second 24 hour period

	Na	Cl	K
1000 ml. Ringer's solution	147	156	4
1000 ml. Lactated Ringer's with 80 mEq. KCl	130	109	84
500 ml. 2.14% NH_4Cl		200	
300 ml. 3% NaCl	165	165	
1000 ml. Lactated Ringer's in 5% dextrose with 80 mEq. KCl	130	109	84
3800 ml. Totals	572	739	172

Third 24 hour period

1000 ml. Lactated Ringer's sol. in 10% dextrose with 40 mEq. KCl	147	156	44
1000 ml. 10% dextrose with 40 mEq. KCl			40
2000 ml. Totals	147	156	84

Discussion

This case demonstrates many interesting aspects of fluid and electrolyte imbalance. First of all the degree of deficiencies which existed make this a most unusual case. Their magnitude is indicated by the initial serum electrolyte determinations and also the total quantities of each electrolyte which were necessary to replace the individual deficits. The correla-

tion between the improvement of the patient's physical and mental status with that of replacement of fluid and electrolyte losses shows well the importance of physical examination and the constant observation necessary in treating any patient who has a severe fluid or electrolyte problem. The defenses of the body maintained a serum sodium concentration high enough to prevent circulatory failure although the total body sodium was low. Compensation for the chloride losses was maintained largely by retention of CO_2 which resulted in the severe alkalosis. Since his deficits had accumulated slowly over a long period, their correction could not be rapidly effected. His losses were of water, electrolyte, and protein. Replacements were also accomplished in that order.

The individual with chronic vomiting loses at first an acid gastric juice with some sodium and relatively little potassium in it. However, if vomiting persists long enough, the hydrogen ion in gastric secretions is replaced by sodium and potassium.[1] Therefore, a patient such as this is deficient not only in water, chloride, and hydrogen ion, but also severely so in sodium and potassium. The characteristic serum electrolyte pattern is one of very severe metabolic alkalosis (column 1, table 1).

Although his blood pressure was 100/80 mm. of mercury, the patient was anuric on admission. The blood urea nitrogen was 94 mg. the next day, and the urine contained significant amounts of albumin. At first glance this renal lesion might be considered only the result of dehydration or so-called prerenal azotemia. However, it is striking that the blood urea nitrogen remained elevated despite adequate urinary outputs for at least ten days after repair of his volume deficit. Also, his urinary specific gravity remained low in the face of severe dehydration.

This patient then had a renal lesion in addition to the functional disturbance created by his fluid loss. The severe potassium deficiency and the alkalosis indicate that this was the nephropathy of potassium depletion which has been clearly described both clinically and experimentally in the past two years.[2] The role of potassium in renal function is becoming more evident. Berliner[3] has described secretion of potassium by the distal tubule which changed materially previous concepts of renal handling of the electrolyte. This was followed by enough evidence that hydrogen ion and potassium secretion were correlated to suggest that these two funcions were competitive. Relman and Schwartz[2] have described a syndrome in man marked by potassium depletion, polyuria, polydypsia, loss of concentrating ability, minimal increase of blood nitrogen levels, and decreases of inulin and para-amino-hippurate clearances. All of these changes are reversible upon potassium repletion. Histologically, the lesion consists of vacuolization of tubular epithelial cells. Roughly, the same spectrum of clinical, laboratory and histological changes has also been described in hyperaldosteronism, one of the hallmarks of which is severe potassium depletion.[4] The same lesion both physiologically and pathologically can be produced in potassium depleted rats.[5] The degenerative changes are histologically relegated to the distal tubule where the active potassium exchanges mentioned above occur and where modern theory places the concentration of urine.

In addition to the loss of concentrating ability these patients all have a metabolic alkalosis, a high serum partial pressure of CO_2, an acid urine (so-called paradoxical aciduria), a high threshold for bicarbonate, increased excretion of hydrogen ion and relative renal conservation of sodium. Many of these changes are thought to be due to a lack of potassium for distal tubular secretion or exchange which is a partial determinate of bicarbonate loss and hence of the plasma partial pressure of CO_2 and of the high hydrogen ion excretion (the reason for the acid urine).

The major therapeutic implication in a patient such as this is that normal electrolyte balance cannot be attained without replacement of the large body potassium deficits. This patient received 428 mEq. of potassium (17.1 gm. of potassium or 32.8 gm. of potassium chloride) in his first 72 hours in the hospital. At the end of this time he was excreting only 0.3 grams of potassium in his urine for 24 hours or only 8 mEq. By the following day the

deficit had been only partially corrected in that potassium excretion rose to 55 mEq. a day in spite of the infusion of 84 mEq. It is also striking that not until his eighth day did the alkalosis disappear and that his blood urea nitrogen remained elevated for eight days despite a daily urine output of over 2 liters a day. This is evidence that the renal tubular lesion took at least ten days to heal. It has also been suggested that patients with severe alkalosis do not tolerate anesthesia and are prone to develop ventricular fibrillation when anesthetized.

This patient was as severely depleted as one can be and yet survive. His essentially uneventful course was in large measure dependent upon clear realization that fluid and electrolyte losses had to be restored before his underlying disease could be treated surgically. Patience is required in the restoration of chronically depleted states, and the wisest course is to wait for complete repletion before surgery is undertaken in the elective situation.

Simple posterior gastro-enterostomy is not the operation of choice for chronic duodenal ulcer. It was elected in this patient because of his emaciation and poor nutritional status with the idea that either sub-total gastrectomy or vagotomy would be done at a later time.

Summary

The case of a young colored male who developed severe metabolic alkalosis and dehydration because of pyloric obstruction is reported. Initial laboratory determinations revealed marked deficits of serum electrolyte concentrations and evidence of renal damage. The problems of replacement of fluid, electrolytes, and protein are discussed and course of therapy outlined. The response to therapy was depicted in the improvement of the patient and restoration of serum electrolyte concentrations. The mechanism of loss of each electrolyte and subsequent development of metabolic alkalosis is given. Renal damage was based on the findings of albuminuria, a low urine specific gravity, and elevated blood urea nitrogen lasting ten days. The association of potassium depletion and renal damage, the reversibility of this process by potassium repletion, and the microscopic and physiologic effects of potassium depletion on the renal tubule are discussed.

REFERENCES

1. Hardy, J. D.: Fluid Therapy. Philadelphia, Lea and Febiger, 1954.
2. Relman, A. S. and Schwartz, W. B.: The kidney in potassium depletion. Am. J. Med. 24, 764, 1958.
3. Berliner, R. W., Kennedy, T. J., Jr., Orloff, J.: Relationship between acidification of the urine and potassium metabolism. Am. J. Med. 11, 274, 1951.
4. Milne, M. D., Muehrcke, R. C., and Aird, I. P.: Primary aldosteronism. Quart. J. Med. 26, 317, 1957.
5. Hollander, W. J., Jr., Winters, R. W., Williams, T. F., Bradley, J., Oliver, J. and Welt, I. G.: Defect in renal tubular reabsorption of water associated with potassium depletion in rats. Am. J. Physiol. 189, 557, 1957.

Changing Characteristics of Society—Report of Workshop Conference. Julian P. Price, M. D., Florence, S. C., Russell A. Nelson, M. D., Baltimore and W. Clarke Wescoe, M. D., Kansas City, Kan. J.A.M.A. 167:49 (May 3, 1958)

"We are convinced that no other profession is as profoundly introspective as medicine, a profession that has given so much and promises to give even more. There appears to be general agreement that American medicine has reached a point never before approached by any system, that American medical education has reached a pinnacle. Yet intensive soul-searching and thought of necessity continue. We are not convinced that the general public is aware of this. We are not convinced that the public appreciates that medical schools decry so-called premedical curriculums; that medical schools prefer those preparing themselves for admission not to segregate themselves from their fellows at an early period in college. We are not convinced that the general public appreciates that medical schools encourage a broad liberal arts education, that they have places for majors in history and sociology as well as in chemistry, that they have reduced their specific requirements in order to allow for this broadened collegiate education. We are not convinced, further, that the general public is aware of the fact that medical schools are stressing the behavioral sciences and social aspects of illness. We believe that the general public must be made aware of these matters.

Further we believe that in some way the public must be educated to know better the role of the physician in order that his energies may best be conserved and his abilities most efficiently used. In many areas the public has come to know that the time the doctor has to spend in his car is wasted as medical service; further it has come to appreciate the fact that the physician can operate more efficiently in his office or clinic facility than at the bedside in a home. If this educational process can continue, our medical talents will be put to better use—more will be served by fewer physicians."

BIG BREASTS
CLINICAL PROBLEMS AND MANAGEMENT

ROBERT F. HAGERTY, M. D. AND FORDE A. MCIVER, M. D.*

Large breasts may be a cause of physical discomfort, a site of pathological change threatening health or life itself, and a source of mental distress. It is our purpose to outline the problems related to large breasts and to propose a method of management in selected cases which offers the greatest degree of safety combined with a reasonable aesthetic result.

Physically, excessive mammary bulk frequently produces a chronic aching sensation of the back, neck, and chest because of the dragging weight. This commonly leads to a stooped posture with rounded shoulders even in the very young with mammary hyperplasia. Chafing of the coapted skin surfaces beneath the breast often leads to dermatitis, maceration, and excoriation, especially in a warm, humid climate. The very size and weight of the breasts frequently interfere with athletic activities.

A hazard to health may be inherent in breasts whether they be large or small. Approximately one in twenty women will develop carcinoma of the breast,[1] the most common malignant growth in the female. The only defenses against this disease are early diagnosis and treatment. The palpation of a discrete nodule by the patient or her examining physician is usually the first step in diagnosis. Although the vast majority of palpable breast masses are benign, benignancy cannot be safely established in discrete nodules without histological examination. In some individuals, repeated biopsies must be carried out, each with its attendant risk. In addition, fibrous tissue introduced with each surgical exploration makes detection of significant changes by future palpation more difficult. Palpation of the abnormally large breast is unsatisfactory under any conditions but the addition of further scarring compounds the problem. Benign breast lesions are known to be associated with malignancy, some studies suggesting an abnormally high rate of malignant change in mastoplasia[2] (chronic cystic mastitis). Although bilateral simple mastectomy is believed to be rarely justified for benign breast disease, many surgeons feel that there is a limit to the number of biopsies which should be carried out in any given patient with a suspicious breast lesion or strong familial history of mammary carcinoma. Because of the increasing incidence of carcinoma of the breast with age, the indications for total mastectomy for symptomatic breast enlargement are greatest at a time when psychologic objection to this procedure is less acute.

Mental distress encountered in patients with large breasts is related to appearance and to a fear of cancer. The mammae may be of a distorted pendulous shape with striae and greatly enlarged areolae (Fig. 1). In addition, their bulk may give rise to difficulties of proper dress and appearance. The ropy and nodular quality frequently encountered in large breasts naturally arouses concern in the patient who has been instructed in the early diagnosis of cancer. Biopsy, when indicated, cannot be omitted but each repeated experience carries with it a significant measure of pyschic trauma and financial burden.

Figure 1

Colored female, age 15. Juvenile hyperplasia of breasts.

Conventional Methods of Management

The most conservative method of management of physical discomfort consists of at-

*From the Departments of Surgery (Plastic Surgery) and Pathology, Medical College of South Carolina, Charleston, South Carolina.

tention to personal hygiene and support of the breasts by a properly fitted and designed brassiere. Such care will give relief of symptoms in a large number of cases. With the more difficult problems, however, these measures provide at best but partial relief. Shoulder straps may give rise to uncomfortable binding and especially in a hot, humid climate intertrigo may be unavoidable.

The conservative management of pathological changes includes frequent examination and adequate biopsies. The success of this approach will be proportional to the adequacy of physical diagnosis. The difficulties associated with the palpation of abnormally large breasts have been referred to. The need for repeated biopsies may be anticipated. In a series of 147 patients with cystic disease followed for 10 years or more by Haagensen, one-third developed further cysts, two-thirds of these being in the opposite breast.[3] In one series of 510 patients with fibroadenoma, a second fibroadenoma was removed in 12.2 percent of the cases.[3]

The most conservative management of psychic disturbances includes those measures recommended for physical discomfort, the choice of clothing aimed at camouflaging the breast mass, and all possible reassurance after careful examination.

The conventional mammaplasty with the preservation of segments of breast tissue provides adequate relief from the physical discomforts associated with abnormally large breasts. This method does not, however, eliminate the possibility of development of pathologic changes in the remaining breast parenchyma and may, actually, increase the difficulties related to differential diagnosis by the introduction of scar tissue in the operative field.

With regard to the psychic aspect of the problem, conventional mammaplasty, when successfully performed, offers the best available solution to the concern over breast contour. Cancerophobia, on the other hand, is not dispelled by this approach and the resultant subsurface scarring, even though not distressing on inspection, may continue as a palpable source of worry.

Simple mastectomy is the most radical conventional approach to the problem of abnormally large breasts and it offers a complete solution to the difficulties related to physical discomfort, to the problem of prophylaxis against future development of breast disease, and to concern over the development of cancer. The great objection to this method of management is the fact that it makes no provision whatsoever for the patient's normal regard for personal appearance or for the psychic importance of the breast as a measure of sexual identity.

The Proposed Method

The ideal solution to the problem outlined would be a procedure which offered the physical relief and prophylactic value of a simple mastectomy, the cosmetic appearance of a mammaplasty, and the combination of psychologic values outlined for both methods. At present, no such solution is available, but the method to be described does provide for complete removal of the breast mass and parenchyma and, yet, preserves all that is possible for the desirable breast contour and appearance. A better shaped breast can be produced with the conventional mammaplasty than with the technique proposed, which

Figure 2

Dotted lines indicate skin incisions from midlateral to midmedial points and also for nipple and areola free graft.

herefore, will have no appeal to the patient whose sole interest in seeking assistance is one of vanity. This method offers all of the prophylactic value and relief from cancerophobia provided by simple mastectomy but it retains the psychic support of a more normal appearance. This procedure will have no application for the occasional patient who may have a total disregard for the presence of her breasts.

Operative Procedure

The operative procedure as originally described by Maliniac[4] consists of elevating superior and inferior flaps of skin and subcutaneous tissue extending from the areola to the midmedial and midlateral breast points (Fig. 2). The nipple and the areola are removed as a free graft and the breast resected in its entirety (Fig. 3). The inferior breast flap is denuded of its superficial epithelial covering and is sutured superiorly to the pectoral fascia. The superior flap is in turn brought inferiorly over this underlying flap and sutured to its base. The areolae and nipples are sutured into their appropriate positions as free grafts (Fig. 4). The superimposed flaps of skin, which were greatly thinned and stretched by the large breasts, fill out with a remarkable amount of fatty tissue giving adequate, though rather flat, contour. Illustrative cases are shown in Figures 5 and 6.

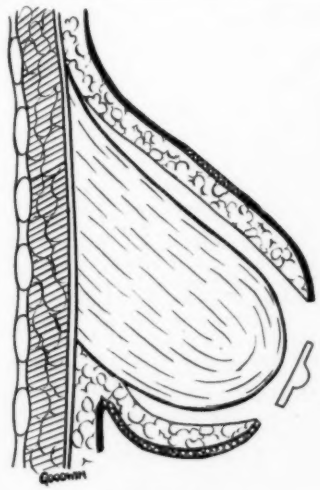


Figure 3

Elevation of skin and subcutaneous tissue flaps preparatory to meticulous resection of all breast tissue. The cross-hatched area on upper flap indicates site of preparation to receive free graft of areola and nipple. The cross-hatched area of lower flap indicates epidermis removed over area to be covered by superior flap.

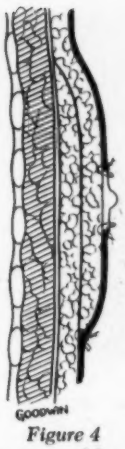


Figure 4

Final position of upper and lower flaps with areola-nipple graft in place.

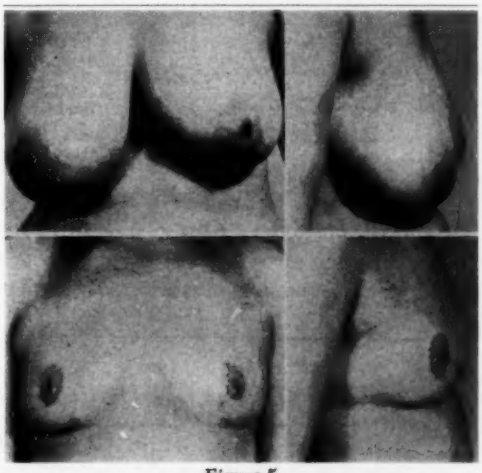


Figure 5

White female, age 37. Upper photos preoperative. Lower photos, two years postoperative.

This patient had a 13 year history of gradually enlarging painful breasts associated with a dragging sensation over both shoulders. A sister had carcinoma of the breast.

Examination revealed large, heavy, pendulous breasts, the right considerably larger than the left. Their elevation by the examiner completely relieved the dragging sensation and made respiration easier. There were no nodules palpable and no nipple discharge was present.

Total mammectomy with reconstruction of breast contours using skin flaps and free nipple grafting was carried out on January 17, 1956. Histologic examination of the specimen revealed mastoplasia.

The patient was well satisfied with the procedure and remains asymptomatic.

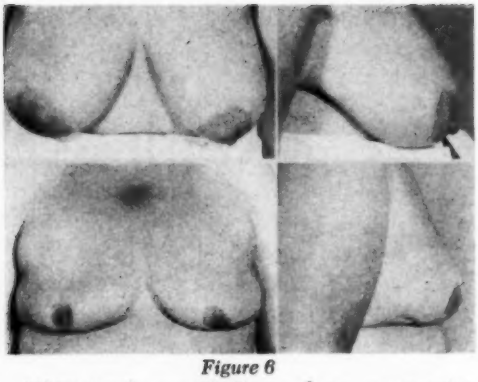


Figure 6

White female, age 35. Upper photos, preoperative. Lower photos, three years postoperative.

This patient complained of chronic pain and soreness of the breasts together with a clear serous discharge from both nipples.

Examination revealed large, heavy, pendulous breasts of a ropy consistency with no discrete nodules. A clear discharge from both nipples was present.

In March, 1955, total mammectomy and reconstruction with breast flaps and free nipple graft were carried out. Histologic examination showed only mild duct dilation and retained secretions.

The operative procedure proved satisfactory to the patient, with complete relief of symptoms.

Conclusions

1. Large breasts may be a source of physical and mental discomfort and a site of pathologic change of serious import.
2. In selected cases mastectomy may be recommended because of these difficulties.
3. The operative procedure proposed presents the disadvantages associated with any major surgical procedure and leaves a relatively small breast contour and an insensitive nipple.
4. The proposed method offers the advantage of preservation of a partial breast contour with nipple and areola, the relief of symptoms related to excessive size and weight, and elimination of the danger of benign and malignant breast changes.
5. The advantages of the proposed method of management warrant its serious consideration in properly selected cases.

Summary

The clinical and pathological problems associated with large breasts are discussed and conventional methods of management are reviewed. A surgical procedure is proposed for selected cases which removes all breast tissue but preserves nipples, areolae, and a small but satisfactory breast contour. The advantages and disadvantages of the proposed method of management are presented.

REFERENCES

1. Levin, M. L., and H. Goldstein. Presented at the Fourth International Cancer Research Congress, St. Louis, 1947 (Cited in Gerhardt, P. R., I. D. Goldberg, and M. L. Levin. Incidence, mortality, and treatment of breast cancer in New York state. New York State J. Med., 55:2945 (1955)
2. Warren, Shields. The relation of "chronic mastitis" to carcinoma of the breast. Surg., Gyn., Obst., 1940, 71:257-273.
3. Haagenson, C. D. Diseases of the Breast. W. B. Saunders Co., Philadelphia, 1956.
4. Maliniac, Jacques W. Use of pedicle dermo-fat flap in mammasplasty. Plastic Reconstr. Surg., 1953, 12:110-115.

The Effects of Smoking on the Respiratory System in Normal Individuals. Kelly T. Mc Kee, M. D. (Charleston) South. Med. J. 51: 1110, Sept. 1958.

A brief review of some of the observations on the local effects of the inhalation of tobacco smoke upon the respiratory system of normal individuals has been presented, along with a report of observations on the effects of tobacco smoking upon ventilation in a large group of normal individuals. While it appears unquestioned that smoking produces irritation of the larynx and adjacent areas, these studies do not demonstrate that ventilation is impaired in young healthy smokers.

Vesprin In The Treatment of Mental Disease. W. G. Morehouse, M. D. and J. E. Freed, M. D. (Columbia) Monogr. on Ther. 3:32, May 1958.

A total of 165 female, white patients under treatment with Vesprin (Triflupromazine) has been observed for periods varying from several weeks to several months since March, 1957. Of the 165 patients, 93 came from the admission ward of the hospital and were treated for short periods of time (up to several weeks); 72 came from the chronic disturbed wards of the hospital and were given Vesprin for at least several months. Slightly over two-thirds of both the new and chronic patients were considered to be improved while receiving the drug. It appears to be effective in reducing emotional disturbances in chronic psychiatric patients, making them more receptive to psychotherapy and other similar forms of treatment. Vesprin is unusually free from serious side effects. No blood dyscrasias, hepatitis, cerebral accidents or other serious side reactions were observed in this series.

*SODIUM CONTENT OF MUNICIPAL WATER SUPPLIES OF TOWNS AND CITIES OF SOUTH CAROLINA

KATHERINE R. BAILEY, B.S. M.P.H.

With the increased number of sodium restricted diets being prescribed for patients with cardiovascular-renal diseases, cirrhosis of the liver and other conditions in which there is increased sodium retention, the sodium content of municipal water supplies of the towns and cities of South Carolina is of especial importance.

Although the sodium content of the water supplies of most towns and cities of South Carolina is a negligible factor in the total daily intake of sodium, the waters of a few towns contain a sufficiently high sodium content that a total daily consumption of from two to two and a half liters would greatly alter the beneficial results of a sodium restricted diet. In such instances it may be desirable to use distilled water or that from a town having a low sodium content.

The cities and towns have been divided into the two following groups:

(1) Cities and towns whose municipal water supplies range from 20 to 50 milligrams of sodium per liter, and

(2) Those municipal water supplies that contain more than 50 milligrams sodium per liter.

Municipal waters of towns of less than 1000 population were not analyzed.

Towns whose municipal waters contained less than 20 milligrams of sodium per liter, an amount considered to be a negligible factor of the total daily intake, have been omitted.

The liter, which is 33.8 fluid ounces, or approximately four ordinary drinking glasses, was considered the best unit of measure for reporting.

1. Towns whose municipal waters contain 20 but not more than 50 milligrams sodium per liter[1]

Town	*Mg.Na/l*
Batesburg	20.0
Bennettsville	28.0
Central	20.0
Cheraw	29.0
Chester	25.0
Chesterfield	30.0
Dillon	20.0
Estill[2]	54.0
Fairfax	25.0
Florence	31.0
Fort Mill	28.0
Holly Hill[3]	25.0
Lancaster	44.0
Latta	26.0
Lexington	28.0
Manning	38.0
Marion	44.0
Mullins	50.0
St. George	39.0
St. Stephens	57.0
Summerville	47.0
Whitmire	30.0
Williamston	24.0
Winnsboro	29.0

2. Towns with more than 50 milligrams sodium per liter.

Town	*Mg.Na/l*
Andrews	158
Bamberg	52
Conway	264
Georgetown[4]	246
Hampton	55
Kingstree	89
Moncks Corner[5]	76
Myrtle Beach[6]	300
St. Stephens	57
Summerton	54
Varnville	55
Walterboro	90

NOTES

1. In listing the sodium content of waters of towns and cities in which the analyses made on individual wells indicated a small variation the greater figure has been used. For towns whose waters have a wide range of sodium content the maximum sodium content is listed with the range given in the footnotes. Many towns pump water directly from the wells into the water mains and any excess that is not used is pumped into the storage tanks. The sodium content of the water in the mains of those towns in which there is a wide range of sodium may be much higher at some times than at others.

Chief, Dietetic Unit, VA Regional Office, Columbia, South Carolina.

2. The sodium content of the four wells at Estill varies as follows: 54, 54, 33, 7.3 mg. Na/l.
3. Of the two wells at Holly Hill the maximum content is 25, minimum content 7.7 mg. Na/l.
4. The sodium content of the five wells at Georgetown range between 246 maximum and 205 minimum.
5. Of the four wells at Moncks Corner the sodium content varies as follows: 18, 22, 44, and 76 mg. Na/l, respectively. However, the flow of the fourth well with the higher content of sodium has a flow in gallons per minute equal to the combined flow of the three other wells.
6. The sodium content of the nine wells at Myrtle Beach ranges from 62 to 388 mg. Na/l. Two wells yield water with a content of 62 and 117 mg. Na/l, and the remaining seven wells range from 279 t 384 mg. Na/l. The mean sodium content may b presumed to be in excess of 300 mg. Na/l. Sinc water is pumped directly into the mains the sodiu content may at times run as high as 388 mg. Na/l

Analyses of the municipal water supplies of town and cities of South Carolina were made by th district chemist of the U. S. Department of th Interior, Geological Survey in cooperation with th South Carolina Industrial Board. The complet tabulation has recently been finished and mad available by Mr. Ralph Horton, District Agent, S. C. Industrial Development for this extraction.

Especial credit and appreciation are due Mr. G. A. Billingsley, District Chemist, who made valuable suggestions which have been incorporated in this report.

MEDICAL COLLEGE CLINICS

THE MEDICAL COLLEGE OF SOUTH CAROLINA

ELECTROCARDIOGRAM OF THE MONTH

Digitalis Effect

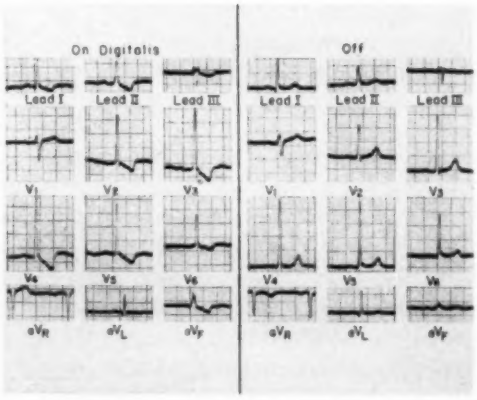
DALE GROOM, M. D.
Department of Medicine

Case Record—When under stress, a middle aged business executive experienced various functional symptoms, including what he described as "a shortness of breath." Digitalis was one of several drugs he had collected in recent months, and this he had continued to take in daily maintenance dosage without any signs of toxicity. Apparently on a subsequent examination by another physician an electrocardiogram had been made and reported as abnormal. Thereafter the patient had restricted his physical activities in the belief that his heart was impaired.

Cardiac evaluation revealed no abnormalities other than those in the electrocardiogram pictured on the left. Most of the patient's symptoms could be reproduced by voluntary hyperventilation.

The tracing on the right was recorded several months after digitalis had been discontinued. Again at this examination, the patient's exercise tolerance was excellent and there was no evidence of heart disease.

Electrocardiogram—During digitalis administration the P-R interval is prolonged to 0.22 sec. (first degree A-V block) and the Q-T interval measures approximately 0.06 sec. shorter than the normal value of 0.36 sec. seen in the tracing on the right. That this difference in Q-T intervals is not due to a change in heart rate is evident from measurement of the R-R intervals in lead aVr (0.84 sec. = rate of 71 per minute) which are about the same in both tracings.



A prominent feature of the first electrocardiogram is the almost straight oblique downstroke of the S-T segments in most leads. They appear to "sag" into inverted and asymmetrical T waves. Small rounded deflections following the T, observed in V_5, V_4 and V_3 but absent after digitalis has been withdrawn, probably represent U waves.

The QRS complexes are unaltered by digitalis. Notable is the degree of counterclockwise rotation which they reveal, an incidental finding related to body build. As viewed from below, the heart is rotated counterclockwise on its long axis, shifting the transition zone to between the V_1 and V_2 positions and causing typical left ventricular complexes to appear as far to the right as V_2. Thus the deflections in V_2 and V_3 resemble those ordinarily encountered in V_5 and V_6. To the left of V_1 the R waves diminish in amplitude as the electrode is moved further from the area of maximum ventricular potentials.

Discussion—Digitalis in therapeutic dosage usually produces changes in the electrocardiogram which are quite characteristic and are commonly referred to as "digitalis effect." They are conspicuous in a comparison of these tracings recorded from a normal heart.

Electrically, digitalis affects predominantly repolarization and atrioventricular conduction, with little or no alteration of depolarization potentials. The repolarization changes are displayed best in leads recorded over the left ventricle—V_5 and V_6 in most instances, but in this case V_3 and V_4 due to the counterclockwise rotation of the heart. Most distinctive is the oblique downstroke of the S-T segments which may begin at or below the baseline, followed by the shorter upstroke of the T wave. Typically the slanting segments are either straight or show an upward concavity (as contrasted to those of coronary disease in which an upward convexity is the rule). Whether polarity of the T waves is reversed or not, they are "dragged down" by the S-T segments so that they generally appear either diphasic or inverted. Reciprocal changes with upright T waves and sometimes elevation of S-T segments are common in leads V_1 and aVr from the right side of the heart. The result is a configuration which is often recognizable as digitalis effect when viewed at a distance. In addition the Q-T interval is shortened by digitalis, U waves may become more prominent, and conduction of excitation through the atrioventricular node may be delayed giving a prolongation of the P-R interval.

Some or all of these changes usually develop in the electrocardiogram within a few hours after digitalization and persist for as long as two or three weeks after the drug has been discontinued. Although they provide a qualitative indication of the presence of digitalis they are not a reliable measure of either the degree of digitalization or of the therapeutic results.

The selective effect of digitalis on repolarization is of interest. Normally, repolarization proceeds from the epicardial surface inward through the ventricular wall—opposite to the direction of depolarization. Its polarity is also opposite, so that normal T waves are deflected in the same direction as the major QRS deflection in most leads. If, however, repolarization begins in the endocardial layers the T wave in, for example, V_6, will be inverted. Or it may begin before depolarization is completed, in which case the S-T segment would be depressed, beginning below the baseline. Such S-T and T wave abnormalities are not secondary to a change in the course of depolarization as occurs in bundle branch block, but to a change in what has been called the "ventricular gradient", and may result from a variety of physical, chemical or metabolic changes in the myocardium. It seems likely that digitalis alters not only the rate but also the course of repolarization in some way, possibly in part through its influence on intracellular potassium. The accentuation of U waves which often occurs in digitalis effect has been ascribed to an action of the drug in driving potassium out of the cell.

Toxic doses of digitalis produce other abnormalities, mainly arrhythmias. These have already been discussed and include both atrial and ventricular ectopic rhythms (tachycardias, flutter, fibrillation), high degree atrioventricular blocks, sinus bradycardia, and particularly a bigeminal rhythm consisting of ventricular ectopic beats coupled with normally conducted beats, which is a classical electrocardiographic sign of digitalis intoxication.

Not always, of course, are the electrocardiographic manifestations of digitalis effect as typical nor as pronounced as in this patient's tracing, and commonly they are superimposed on the abnormalities of organic heart disease. Nor can one always differentiate with certainty the repolarization changes of digitalis from, e.g., those of "left ventricular strain." Obviously it is advisable to know whether or not a patient has recently received digitalis when interpreting his ECG (especially when evaluating abnormalities of the S-T segment, T waves, and the P-R interval) and, conversely, to examine a tracing for indications of the drug before administering digitalizing doses. Some patients know surprisingly little of the identity of their medications. On the other hand, cases are on record of deliberate use of digitalis to obtain a diagnosis of heart disease for purposes of compensation or evasion of military service.

This case illustrates a real pitfall in medicine, that of construing results of treatment as evidence of disease. The recognition of digitalis effect is of the utmost importance in the interpretation of electrocardiograms.

Note. This series of discussions of the electrocardiogram, having run now for three years in this *Journal*, will appear shortly in book form as *Clinics in Electrocardiography* (Charles C. Thomas, Publisher)

NEUROLOGICAL CONFERENCE

Acoustic Neuroma

Edited by

O. RHETT TALBERT, M. D.

DR. TALBERT: The case for presentation this morning is a fairly classical example of posterior fossa tumor, the most common such tumor encountered in adults. It is presented chiefly to illustrate the difficulties encountered in diagnosing this lesion early and the difficult problem involved in management of these cases when they are not diagnosed early.

Mrs. T. is a 62-year-old housewife admitted to the Medical College Hospital on January 6, 1958. The present major complaints are "I can hardly see. The left side of my face and tongue have no feeling in them". Her symptoms first began in 1950 with the onset of deafness in the left ear. She went to "two ear specialists" who told her the nerve to the ear was dead and that there was no satisfactory treatment for the condition. At times she would notice a ringing in

the left ear and a sound which she describes as "sh-h-h-h like the ocean". She remained otherwise asymptomatic until the summer of 1951 when she became "nervous" and irritable and noticed occasional transient disturbance of equilibrium. She was found to have an elevated blood pressure. She has been taking "blood pressure pills" off and on ever since then. The deafness, tinnitus, intermittent dizziness and disturbance of equilibrium continued at a more or less stable pace. There was no further definite change until August of 1956 when she developed a numbness of the left side of the face and tongue, the latter feeling "like I had scalded it with hot coffee". This became progressively more noticeable to the point that six months ago she became unable to taste anything on the left side of her tongue and had no feeling whatsoever over the left side of her face. Although the deafness in the left ear continued, she believes that either the tinnitus disappeared or she became so accustomed to it that it was not noticeable. About 3 months ago she developed a feeling of fullness in her head and some awareness of clouding in her thinking. For about the past year she has become gradually aware of visual difficulty. When she fixed her gaze on people she could not recognize them at first but after holding her gaze on them their faces would become distinct. Sometimes she would have "spots in front of my eyes like when you look at the sun then look away". This difficulty with vision necessitated that she stop driving an automobile. It is worthy of note that throughout the some seven years of her symptoms she was constantly under the care of a physician, in fact several physicians. In the fall of 1956 she tells us that she had some roentgenograms made but no change in her treatment was advised. We have no record of these films nor what, if any, diagnosis was made from them. She was fitted with glasses when her visual difficulty began, but with no benefit. For the past 3 months she has been progressively disabled by a worsening of dizziness, unsteadiness of gait, nervousness, light-headedness, and increasing impairment of vision. She has stopped walking almost completely except with someone supporting her. She denies any headache even up to the present time.

On examination you see that she appears well nourished and healthy. She is alert, quite apprehensive, but oriented as to time, place and person, and quite cooperative. She gives a good account of both remote and recent events, and in fact, gives no evidence of impaired mental faculties. Her speech is normal except for a faint, occasional tremor in her voice which we might well attribute to her apprehensive state. Sitting here in the chair she seems to have good use of herself. Now when we ask her to stand and walk for us you see that the fear of falling which has plagued her for the past several months is quite justifiable. She stands with her feet apart, quite uncertain of herself. As she walks she reaches constantly for support and is really quite frantic in her fear that she will fall before we can catch her. There is about equally good use of the limbs on the two sides with no evidence of focal motor weakness. In fact, the impression is gained that she is not so much weak as unwilling to depend on her equilibrium to keep her in the upright position.

The general physical examination reveals nothing remarkable. Her blood pressure since hospitalization has ranged from 132/80 to 166/86.

On neurological examination, first of all, she has bilateral papilledema with scattered hemorrhages around the right disc. (It is worthy of note that her referring physician, under whose care she came only a month ago, described to me on the telephone the papilledema with essentially the picture of the fundus as just described. He examined her fundi when she first visited him a month ago and is quite certain that the discs were perfectly normal at that time. Therefore we have good evidence that the papilledema is of very recent development in spite of her history of visual difficulty dating back a year or so.) When she looks straight ahead her eyes are well aligned and quiet, and her pupils equal. On following the moving finger as she looks to the left of midline she develops a coarse horizontal nystagmus with the slow component toward the midline. Now if she follows the finger to the right she again develops a finer but persistent nystagmus with the slow component toward the midline. On following the finger upward or downward there is no vertical nystagmus. The pupils react briskly to light both directly and consensually. When you first look at her face it seems quite symmetrical with normal expressional movements but if you notice closely you see a slightly deeper nasolabial fold on the left than the right and if you watch her face you will see occasional, faint twitches of the facial musculature on the left, particularly around the upper lip and in the left lower eyelid. She closes the eyelids tightly with good power and about equally on the two sides and as she does so the grimacing movements of the face are about equal bilaterally. Again, though, when she increases her facial tone in this manner the fasciculations of the left side of the face become a little more pronounced. In retracting her lips and in attempting to whistle and on smiling the face is symmetrical. The external auditory canals are clear and the drums normal.

She cannot hear the tuning fork in the left ear by air conduction and there is marked diminution of bone conduction as compared to the opposite side. On the Weber test she lateralizes the sound consistently to the right ear. We have audiograms on her which show complete absence of bone and air conduction on the left. Caloric test of labyrinthine function showed nystagmus of 1-1/5 minutes on the left and 2-3/4 minutes on the right, indicating diminished function of the left. In other words, both auditory and vestibular components of eighth nerve function are

impaired on the left. The tongue and palate movements are normal but the gag reflex is absent on the left side. There is a diminution of pain sensation over the entire left side of her face, tongue and oral mucous membrane. The left corneal reflex is absent. Although she complains of a subjective feeling of numbness over the left side of the face, it is difficult to demonstrate any consistent lack of light touch over that side with the cotton. As she clenches the jaws the masseter and temporalis muscles are of about equal bulk and strength of contraction in the two sides and her jaw does not deviate on opening her mouth against force, indicating that the motor component of the fifth nerve is intact. Testing for taste sensation was done on the ward this morning and Dr. Manos reports diminution of taste over the left side of the tongue as well as the numbness to pinprick that we have just demonstrated. This indicates impairment of both the fifth nerve sensory component and the seventh nerve taste component.

When we have her extend her arms in front of her with the fingers spread apart there is a slight instability of the position of the upper limbs. She performs the finger-to-nose test in a clumsy fashion bilaterally and you see a fine rhythmic tremor of each extremity as she moves her finger from my finger to her nose and back. No doubt, this instability of movement is at least partly the explanation for what she has assumed to be "nervousness". There is no distinct difference in the ataxia between the two upper limbs. Again we note that there is good muscle development in both the proximal and distal groups of the upper extremities. Her grip is quite good bilaterally. On passive movement of the limbs I can detect no alteration of muscle tone.

The tendon reflexes are present and equal throughout except for the radial-periosteal reflex which is slightly brisker on the left than on the right. The plantar reflexes are both flexor although that on the left is not as distinctly so as the right. Pain, light touch, temperature, position, tactile localization and stereognostic sensibility are all intact throughout.

In brief summary then, the case is that of a middle-aged woman with the insidious onset of hearing loss and tinnitus in the left ear 7 years ago. This has gradually progressed and as the years have gone by she has developed ataxia and dizziness which she attributed to high blood pressure. More recently she has developed a feeling of numbness over the left side of the face and tongue and a feeling of fullness in her head. A progressive impairment of vision bilaterally has developed within the past year and her total array of symptoms has progressed to the point that she has been unable to get around at all without assistance for the past several months. Examination reveals evidence of increased intracranial pressure, impairment of function of the fifth, seventh, eighth and ninth cranial nerves on the left side, and impairment of cerebellar function bilaterally. There is no indication of involvement of the motor or sensory tracts passing through the brain stem and the cranial nerves on the right are conspicuously spared.

We are immediately led by the multiple cranial nerve and cerebellar involvement to consideration of a lesion in the posterior fossa of the cranial vault. But let us consider the symptoms in the light of their development. The symptoms of tinnitus, hearing loss and dizziness are the classical ones of Meniere's syndrome at first glance. However that syndrome is a disorder of the end organs of hearing and equilibrium (i.e. the vestibular canals and cochlea in the inner ear) and would not account for the involvement of the other cranial nerves and cerebellar function that we have demonstrated. Therefore we could immediately dispense with this diagnosis even if she did not have papilledema. The dizziness and ataxia of which she has complained for seven years are among the most common symptoms we encounter in clinical practice, particularly in women. We are prone too often to pass it off as "psychogenic" or due to hypertension as seems to have been the case here. However the presence of deafness on one side should immediately make one think of a more localized lesion. The slowly progressive development of the symptoms would be quite incompatible with a vascular lesion, even though she was known to be hypertensive. There are a number of diagnostic possibilities that could have been justifiably entertained through the years but the point to be made is that the combination of symptoms and signs implicating the fifth, seventh and eighth cranial nerves on one side and the disturbance of equilibrium, vague although it may have been, should always make one suspect and take steps to rule out a lesion in the posterior fossa. Since one of the most common posterior fossa lesions developing in this slowly progressive manner is an acoustic neuroma, roentgenograms of the skull, including a view to visualize the petrous bones and internal auditory meati is perhaps the first ancillary study that should be obtained. We have roentgenograms of the skull and I should like to ask Dr. Hodges to present those to us.

DR. HODGES: We have the usual series of skull films here including a Towne projection. On the Towne view (Fig. 1) you can see that on the left the apex of the petrous bone is destroyed and the internal auditory canal is irregularly eroded in its medial aspect. In comparison, you will see that the right petrous apex is quite well outlined and the internal auditory meatus is of normal size. The other views show nothing of consequence except that on the basilar view we see on the right a normal petrous bone but on the left there is an irregular area of bone destruction. On the lateral view we do find the posterior clinoid processes thin, indicating increased intracranial pressure. The sella turcica is normal in size.

DR. TALBERT: Thank you. This is a situation in which the diagnosis is unfortunately easy in the stage

at which we see it. Had we examined the patient 4 or 5 years ago it would have been considerably more difficult. On the other hand, if one is aware of the possibility, this tumor can be diagnosed long before it has reached the stage of the present case. An acoustic neuroma (also designated as acoustic neurofibroma, Schwannoma, perineural fibroblastoma, and cerebellopontine angle tumor) is the most frequent posterior fossa tumor in adults. It is usually unilateral and, as the term cerebellopontine angle tumor implies is nestled in the angle between the side of the pons and the ventral aspect of the cerebellar hemisphere. It is an intrinsic tumor of the eighth nerve which emerges from the brain stem in the angle. It is usually unilateral, although on rare occasions a bilateral tumor is found. This is particularly true in Von Recklinghausen's neurofibromatosis in which there may be similar tumors of multiple cranial and peripheral nerves over the body. The single neurofibroma may involve other cranial or peripheral nerves but for some unknown reason it involves the eighth nerve much more frequently than the others. It characteristically arises on the nerve at or near the point where it leaves the floor of the skull by way of the internal auditory meatus. Since it grows into the internal auditory meatus, expanding that canal, it is likely to produce distortion aad erosion of the canal early in its course. Therefore it can often be diagnosed quite early by a careful examination and comparison of the internal auditory meati on the so-called Towne view of the skull roentgenogram. The tumor histologically is benign, yet because of its tendency to invade the internal auditory canal, it is extremely difficult to remove surgically even in its early stages.

The usual clinical course of this tumor is classically exemplified in this patient. The very first symptom is usually unilateral hearing loss and tinnitus. Either before or after the onset of deafness there is usually some disturbance of equilibrium although this is often nothing more than a minimal subjective feeling of unsteadiness. The course is usually measured in years since it is a slowly growing tumor. Once it has grown to sufficient size to involve other structures than the eighth nerve the most common symptom to be added is that of involvement of the fifth nerve. The earliest manifestation of involvement of this nerve is a diminution or loss of the corneal reflex on the same side. Therefore one should always check the corneal reflexes in patients presenting with this array of symptoms. As the fifth nerve becomes more completely involved loss of sensation over the side of the face on the side of the tumor develops, as was the case here. Next most frequently involved is the seventh (facial) nerve on the same side. This may take the form of a minimal facial weakness or, as is the case here, symptoms of irritation in the form of unilateral fasciculations or facial spasm and contraction.

Since the tumor lies adjacent to the cerebellar peduncles, cerebellar signs in the form of ataxia and nystagmus are likely to develop fairly early in the course. Of course, the nystagmus and disturbance of equilibrium are probably due to both vestibular and cerebellar involvement, the former being a function of the eighth nerve. The cerebellar impairment usually remains dominant on the side of the tumor but may be bilateral from the beginning. Because the tumor is outside the brain stem, it must reach considerable size before it creates sufficient pressure to block the flow of spinal fluid through the aqueduct and fourth ventricle. Therefore signs of increased intracranial pressure such as papilledema, headaches and vomiting do not develop until the very late stages. This is in contrast to an intrinsic brain stem tumor where increased pressure may be an early sign. Another point of differentiation between this tumor and an intrinsic brain stem tumor is the unilateral involvement of multiple cranial nerves and the absence of involvement of the sensory and motor tracts passing through the brain stem, both of which occur much earlier in the intrinsic tumors. Acoustic neuroma can be differentiated from a primary cerebellar tumor by the early and marked eighth nerve involvement. We have already pointed out that the diagnosis can be made relatively early in the course by x-ray examination of the internal auditory meati. The other important and very helpful diagnostic method is examination of the spinal fluid. Almost invariably this particular tumor causes elevation of the spinal fluid protein.

I do not wish to imply that once the diagnosis is suspected the patient need be rushed into surgery. On the contrary, it is often wise to forego surgery even when one is fairly sure of the diagnosis, so long as the patient is tolerating the tumor without any notice-

able increase in signs. You have plenty of time because the course of the tumor is measured in years. On the other hand, it is technically a difficult tumor to remove and it is not wise to postpone surgery until it has so deeply invaded the internal auditory meatus and so compressed the brain stem structures that its removal involves unavoidable brain stem damage. Dr. Martin, would you please comment from the surgical standpoint on this case?

DR. LUTHER MARTIN: Well, I don't need to say a great deal about the surgical management but I hope you all have this picture clearly in mind because it is a very classic example. You will only occasionally see one this far advanced. Now, although this lady's problem is diagnosed I think her chances of having the tumor removed extremely slim. Once these tumors have reached what we call stage 4, surgical removal is practically hopeless. Dr. Talbert did not give you the development by stages in which we like to grade them from the surgical standpoint. We usually grade them from stage 1 through stage 4, stage 4 being that in which increased pressure develops. This means that the tumor is stuck to the side of the pons and obstructing the aqueduct and fourth ventricle. Of course, you can pull it away at surgery but this does so much damage to the vital brain stem structures that the patient is not likely to be able to survive it. So I think the early diagnosis is so important if we are to get at them before this takes place and while they are relatively free from attachment to the brain stem.

In spite of the bad prognosis surgically here, I believe we should go ahead with an operation, because she has increased intracranial pressure that she cannot tolerate for long. There is a chance we may be able to relieve this, but the hope of doing anything more is very slim.

Addendum: Exploration of the posterior fossa was performed the following day by Dr. Luther Martin. A firm, yellow, encapsulated tumor "the size of a lime" was encountered in the region of the eighth cranial nerve on the right. Histologic examination revealed it to be a typical neuroma. Part of the tumor was removed and a Torkildsen procedure done. Immediate postoperative condition was good. Two days later the patient developed respiratory paralysis and peripheral circulatory collapse and died. Autopsy revealed massive necrosis and edema of the brain stem and both cerebellar hemispheres.

PHYSICAL FITNESS OF THE SCHOOL-AGE CHILD

HENRY W. MOORE
Columbia, S. C.

Fitness is a difficult word to define, especially when one attempts to relate it to the school age child. For purposes of discussion one must consider the total or entire child, and certainly one must include emotional, mental, and physical aspects. It would seem more desirable for the physician member of this panel to largely limit his remarks to the physical side of fitness since there are more capable discussants here to cover the other more nebulous aspects.

In order to discuss the physical attributes and health problems of the school age child one may best separate school children into pre-adolescent and adolescent groups or ages.

Growth

From the end of the first year to the sixth year growth is slow and tends to be relatively greater in linear growth. During these pre-school years there is an accompanying increase in physical activity and improved muscular and motor coordination and function, as well as rapid mental growth.

Physical growth of the school age child tends to increase steadily from approximately six years up to the adolescent years. Generally, growth is slow and progressive, and does not deviate from this pattern until onset of puberty, when there is a rapid increase in the rate of growth. From six to twelve years, there is an increasing slow growth in height and corresponding but more rapid weight increase, girls' growth being more accelerated.

Diseases and Infections

The school age child is susceptible to various infectious diseases, particularly the so-called respiratory viral infections, which include all of the common contagious diseases of childhood. Epidemic outbreaks of influenza, streptococcal sore throat, viral herpanginal sore throats, as well as the common cold, are encountered among our overcrowded schools practically every year. While acute respiratory infections make up the major group of school age illnesses, only rarely do we encounter serious, chronic, or recurrent difficulties. At the present time there is world-wide anxiety among medical authorities concerning the spread of staphlococcal infections which are presently a problem chiefly of young infants, old and debilitated individuals, and hospitalized patients. Nevertheless, this infection can become a serious problem when it complicates the relatively minor illnesses of childhood.

Non-preventable contagious diseases, especially chicken-pox, mumps, German measles, scarlet fever, when promptly or adequately treated, and measles (which can be modified) seldom have severe complications in the previously healthy child.

Anemias of the school child are usually of moderate degree and generally a direct result of inadequate

iron in the diet. Such diets generally consist largely of excessive milk and carbohydrates, with little or no protein foods.

Acute or advanced illnesses or diseases are not difficult to detect. However, the important health problems of childhood are typically asymptomatic and vague in nature. For instance, sub-optimal growth, moderate anemias, nutritional deficiencies, visual disorders, hearing difficulty, childhood tuberculosis, and other less frequent disease states, are difficult to detect and often require special investigation and study.

Accidents

Another major problem affecting the health of the school age child not typically considered a disease is certainly of utmost concern. I am alluding to accidents, which are the leading cause of death in all children under 15 years of age. Preschool and younger school children are most frequently injured in the home, but are not immune to injury at school. It is estimated that there are 17,000 deaths yearly under 15 years of age in the United States from accidents alone. Approximately 2,000,000 children are incapacitated yearly for varying periods of time, and more than 50,000 are crippled permanently each year from accidents. The majority of the serious accidents are results of falls, burns, vehicle accidents, poisoning, and drowning. The suffering and expense is appalling! Incidentally, while speaking of accidents, I have been informed that our school busses are frequently overcrowded far beyond load capacity. Certainly all safety rules should be enforced in our school transportation when we consider the high price we must pay for serious accidents involving our school busses.

Dental Health

We should not forget dental caries as a very serious problem in our school age child. No doubt our highly civilized dietary advances, (or should I say dietary decline?) and advanced food salesmanship, has reached the point where we often neglect much needed nutritional and roughage factors which are consistent with good dental health. No doubt a large proportion of dental caries of the school age child (estimated 90%) is the direct result of the high carbohydrate, low roughage diet we encounter in the average American home, plus poor dental hygiene. Needless to say, cod liver oil and calcium are still valuable adjuncts in proper growth of bones and teeth. I believe that the school authorities would do a great service to their students if the school canteens were abolished, or required to stock only fruits, fruit juices, and milk rather than candies, cookies, chewing gum, etc.

Special Tests

Visual disturbances in the school age child are frequently familial, especially myopia and hyperopia, and can best be detected by proper eye examinations before the child reaches school age. Serious loss of vision may occur, however, after a child reaches school age and throughout the child's school career. Hence, the need for repeated periodic vision screening tests should be evident. Certainly eye screening tests ideally should be done with the child's yearly physical examination, but testing every two to three years would be of major benefit.

Hearing tests should be available for all children who are subject to repeated ear infections or who have had frequent ear infections prior to school. Inattention, dislike of school, failures,—all may be the result of poor visual or auditory functions. Obviously a simple hearing test should be done on all children before starting school and at periodic intervals.

A routine pre-school tuberculin test should also be performed as part of the pre-school examination. All positive reactions would of course need special study and investigation. Such tests should be repeated at intervals as part of the child's routine health program.

Adolescent Years

Adolescent school years are characterized by a most rapid growth spurt with accompanying sexual maturation and often a corresponding emotional instability. Health problems of the adolescent parallel those of the earlier school years; however, nutritional deficiencies variously caused by faddish or poor dietary habits are more common at this age. Skin disorders, especially seborrheic scalp and face disorders, acne, and eczema, are problems of both sexes in adolescent years. These skin disorders are frequently the result of the combined factors of improper diet, poor skin care, with superimposed infection, as well as accompanying endocrine dysfunction of adolescence.

Because of the rapid growth in adolescence and often sub-optimal nutrition and rest, the adolescent child is more susceptible to tuberculous infections, or reinfection in previously unrecognized childhood type infections.

Emotional Development

The child's emotional development certainly is greatly influenced by his school environment. Needless to say, a mature, sympathetic, teacher exerts a wonderful influence on a youngster who has had a poor home background. However, a tremendous amount of harm can conversely occur in emotionally unbalanced children who have an immature or unsympathetic, haggling teacher.

Psychoneurotic parents tend to beget or develop psychoneurotic children. A child must have several basic needs supplied in the home or school, preferably in both places, if he or she is to grow and mature emotionally as well as physically. One may simplify these needs as: love, or a feeling of being wanted and needed; individual respect or self-esteem, self confidence; and the need of discipline is also a basic essential for good emotional growth. If these oversimplified factors are available for the growing child at home, then we will find a stable, secure child in most instances. The teacher may serve as a most valuable parent substitute to the emotionally hungry, insecure, child.

Immunizations

Finally I should like to comment on immunization. The enlightened parents will have had their children immunized prior to entry into school. The State of South Carolina requires smallpox vaccination only. How many parents realize that periodic recall or booster doses are indicated for diseases such as diphtheria through ten years of age; tetanus throughout the school years and preferably periodically throughout the individual's life, and smallpox every five years. It is deemed advisable to discontinue whooping cough immunization after the child enters school. Typhoid series are generally indicated in semi-rural or rural areas periodically. Finally, poliomyelitis immunizations at present are considered adequate following three doses of Salk vaccine. A fourth injection in the face of a developing epidemic or local outbreak would seem advisable.

The lack of physical fitness of the school age child should be a matter of utmost concern to every parent, every educator or teacher in our country. With little argument, we can find ample statistics and evidence of the American adult and especially the child's physical softness. Will Rogers many years ago stated that "we are fast becoming a generation of thumbs"—and he preceeded the era of the three car family and the true pushbutton age. As parents, are we helping our child's physical, mental, or emotional growth when we allow endless hours of television and comic reading? How many of our school age kids walk to school before they learn to drive or possess their own tin lizzy to make it unsafe for others to do what they should be doing? I firmly believe that each and every child should learn to swim in the early school years. If manual training or mechanical drawing is a major subject in our educational system, then a properly conducted physical education course should be a compulsory minor course from which each and every child could benefit. Those who refuse physical training should have the opportunity of blowing the tuba in the marching school band.

THE PHYSICIAN'S ROLE IN THE SOCIAL SECURITY DISABILITY PROGRAM

Released by

P. G. SHERER,

Director, Vocational Rehabilitation Department

Doctors, hospitals, institutions, and agencies who have contact with disabled people are frequently asked these days to fill out medical reports in connection with claims under the disability provisions of the social security law. Under these provisions, disabled workers 50 to 65 years of age, and the disabled dependent sons and daughters of retired or deceased workers, may receive monthly disability paymnts. Disabled workers under age 50 may have their social security records "frozen." This protects the future benefit rights of the disabled worker and his family.

To qualify under these disability provisions, a person must be unable to engage in any substantial gainful activity by reason of a medically determinable physical or mental impairment which can be expected to result in death or to be of long-continued and indefinite duration. A disabled worker must, in addition, have social security credits for work in at least 5 out of the 10 years before he became disabled, including a year and a half out of the 3 years before his disability begun. A disabled child must be both unmarried and dependent, and must have become disabled before his or her 18th birthday.

Applications under the social security disability provisions are taken by the more than 570 social security district offices, located in communities all over the nation. The social security district office gives the disabled applicant information about his rights, helps him to fill out his application, and to get the proofs and documents he may need to support that application. Under the law, the disabled person is responsible for furnishing, at his own expense, the evidence to show that he is "disabled" within the meaning of the social security law.

His social security district office gives him one or more copies of a medical report form on which this evidence can be supplied. He is asked to take or mail this form to his attending physician or to a hospital, institution, public or private agency where he has been treated for his disabling condition. This report form, designed as a guide for the reporting physician, lists the kind of medical facts essential for the determination of "disability." However, the reporting doctor is not required to use it; if he prefers, he may make his report in the form of a narrative summary or he may submit photocopies of the pertinent medical records. The completed reports are to be returned by mail to the social security district office (or to a state agency, if indicated).

By providing a full and objective clinical picture of his patient, the reporting doctor fulfills his responsibility to his patient and, incidentally, expedites the decision. To be of maximum use for the evaluation of a

patient's capacity for work, the report should include a history of the impairment, the symptomatology, clinical findings and diagnosis. Obviously, the reporting physician has an important role in the operation of the social security disability provisions. He is not, however, asked to decide the issue of "disability". The determination as to whether a patient is "disabled" must be made within the scope of the social security law; often it is based on evidence from more than one medical source. Also the determination must take into account factors which are not purely medical—factors such as educaton, training and work experience.

After the applicant has filed his claim under the disability provisions, and furnished the supporting evidence, his case is forwarded by his social security district office to an agency of his state. Under agreements between the individual states and the Federal Government, these state agencies make the disability determinations for their own residents.

In the State of South Carolina, the agreement with the Federal Government provides for the State Vocational Rehabilitation Department to make these disability determinations, except that determinations due to impairment of vision are made by the Division of the Blind of the State Department of Public Welfare.

The evaluation of disability is made by a "review team" in the state agency. There are at least two professional people on each team. One of the two is a doctor of medicine (often a practicing physician who serves with the state agency on a part-time basis); the other is trained in evaluating the personal and vocational aspects of dsability. The team must decide whether the applicant is sufficiently disabled to prevent him from engaging in any substantial gainful activity within the foreseeable future.

In many cases it is necessary to write back to the reporting physician because the medical report does not contain enough clinical facts. As a rule, the kinds of medical facts that the attending physician needs in making his diagnosis and in treating his patient are the same as those required to evaluate the severity of impairments in disability programs. However, certain medical facts are more highly significant in disability evaluation than to medical management of the case. To evaluate the effect of the impairment on the individual's ability to work requires the kind of medical evidence that confirms the diagnosis and measures remaining functional capacities of mind and body. By furnishing complete and objective evidence, the reporting physician makes it unnecessary for the reviewing physician to "write back" for additional clinical or laboratory data.

Where the medical evidence initially submitted indicates a reasonable likelihood that the applicant is disabled, but more precise clinical or laboratory findings are needed to arrive at a sound decision, or to resolve conflicts in the evidence, a consultative examination (usually at the specialist level) may be ordered to obtain additional information. Selection of consulting physicians and payment of fees are governed by state practices.

Some doctors feel that they should be reimbursed by the Government for the cost of preparing the medical reports on their patients, and it is, of course, quite within their prerogative to charge the patient a fee for that service. However, under the law, the Social Security Administration cannot pay that fee; that is the individual's responsibility.

Other doctors are perturbed when asked to complete medical reports for individuals whom they may not have seen for years. In these cases, however, the physician is not expected to describe the present condition of the patient, but his medical condition as of the time he made his last examination. Although the social security disability provisions were made applicable to persons whose disabilities may have begun as far back as 1941, all those with long-standing disabilities must apply before July 1, 1958. After June 1958, therefore, this problem should be much relieved.

Evaluation of Disability

The central purpose of disability evaluation is to determine remaining mental and physical capacities. To determine: (1) what the claimant has left, and (2) what he can do with what he has left.

A realistic evaluation of disability must be based on clinical and laboratory tests of the individual's ability to meet the metabolic demands of activity, to reason, to perceive, and to perform certain basic activities such as sitting, standing, bending and walking. When incapacity results from severe impairment of one or more such functions, it is essential to establish not only the fact that functional impairment exists, but also its extent.

A brief discussion of disability from heart disease may serve to illustrate the kind of evidence needed to measure the patient's remaining functional capacity, after appropriate therapy. Most frequently, impairments of the circulatory system produce loss of bodily function by reduction of cardiac reserve, or interference with peripheral vascular circulation. As a result the circulatory apparatus cannot meet effectively the metabolic demands placed upon it. The diagnosis of the condition usually indicates whether the impairment is caused by valvular disease, myocardial damage or vascular pathology.

Cardiac size by x-ray examination or physical and electrocardiographic findings furnish objective proof of cardiac pathology. The amount of dyspnea or angina described in terms of the number of steps that can be mounted or distance in feet or blocks that the patient can walk is highly significant to evaluation of the degree of loss of function. The presence or absence of cardiac edema and response to therapy are also indicative of the severity of cardiovascular impairments. The status of the pulse in the peripheral vessels may provide gross clinical evidence of impaired circulation of the extremities.

Impairments of the cardiovascular system may manifest themselves with dramatic suddenness, e.g.,

myocardial infarction, obstruction of vessels in peripheral or central nervous system circulation, lungs, and other visceral organs. The initial clinical manifestations are severe and the prognosis dubious. With survival from the acute stage, and appropriate therapy, substantial improvement can be expected over a period of time. A realistic evaluation of remaining function should be made after the convalescent period. Hence, the clinical and laboratory findings after maximum improvement from treatment are particularly valuable in making a determination of remaining cardiac, brain or other function. (Note that a "waiting period", is prescribed by law, i.e., the first monthly disability insurance benefit cannot be paid until the seventh month after the onset of the disability.) A description of the acute attack helps confirm the diagnosis and should therefore be included in the report.

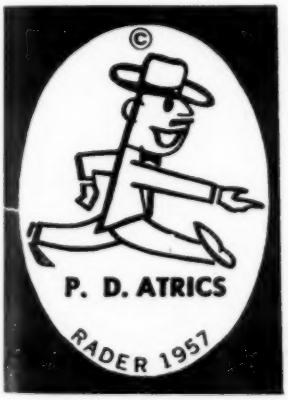
Loss of function is evaluated on the basis of clinical and laboratory findings after maximum benefit from treatment. Clinical information concerning the nature of the loss and response to treatment furnishes information on stability of functional capacity, i.e., a history of periodic decompensated heart disease, in spite of treatment, would indicate a comparatively severe condition.

More complicated tests of vascular function may be required in certain cases, e.g., arteriography. The reporting physician should not be concerned because he may not have equipment to perform these tests. A carefully performed exercise tolerance test (if not medically contraindicated) will almost always provide the clinical evidence needed to evaluate the degree of remaining function.

Conclusion

In developing evaluation guides for the use of the state agency and its own technical and professional personnel, the Social Security Administration has had the continuing cooperation of a Medical Advisory Committee appointed by Commissioner Schottland, in February 1955. The Committee is composed of recognized specialists associated with medical and allied professions in various fields outside Government, such as general practice, research, medical education, industry and labor.

The American Medical Association has cooperated with the Social Security Administration by informing its members about the medical aspects of the disability program, especially the preparation of medical reports. On June 1, 1957, *The Journal of the American Medical Association* carried a comprehensive report on the administration and organization of the disability provisions. Regulations on the meaning of disability appeared in the September 28, 1957, issue.



REID'S

VITAMIN DROPS

6

Each cc. contains:

Vitamin A palmitate	4,500 U.S.P. Units
Vitamin D calciferol	1,000 U.S.P. Units
Ascorbic Acid (C)	75 mg.
Thiamine	1.4 mg.
Riboflavin	2.4 mg.
Niacinamide	14.0 mg.

REID LABORATORIES, INC. ATLANTA 14, GEORGIA

PRESIDENT'S PAGE

A physician should not dispose of his services under terms or conditions which tend to interfere with or impair the free and complete exercise of his medical judgment and skill, or which tend to cause a deterioration of the quality of medical care.

Contract practice *per se* is not unethical. However, under certain conditions it becomes unethical. These conditions are: inadequate compensable fee schedule making it impossible to render competent care; underbidding by physicians in order to secure a contract when the community is denied a reasonable degree of free choice of physicians; and, last but not least, the solicitation of patients either directly or indirectly. On the other hand it is quite ethical for a doctor to enter into a contract with firms and corporations to properly care for accidents occuring in the transaction of their businesses, to practice preventive medicine for the betterment of the health condition of the employees, and for the purpose of practicing general medicine among the employees of industrial plants located in isolated areas widely distant from towns and places where physicians would naturally locate, provided he is paid a fair living wage for his services, and provided his medical skill and judgment are not hampered by restrictions.

Management in industry recognizes the fact that it is just as important for it to have a medical department as it is to establish employment offices. Pre-employment examinations, preventive health and accident measures, and the proper handling of accidental injuries are a must if industrial organizations expect to prosper in this highly competitive age. As physicians, we should do all in our power to care for their needs, much the same as we care for the individual patient, when given the proper opportunity to help and participate in these necessities.

The age-old professional ideal that medical service must be rendered to all, whether able to pay or not, is one of the strongest holds we have on public approval and support. That ideal is basic in our ethics. The abandonment of this ideal and the adoption of the principle of service only when paid for would be the biggest step towards socialization of our art that the medical profession has ever taken. If such service is not rendered, the deaf ears of our legislators and a majority of our population will be turned to our arguments about better service to the people and freedom of choice of doctors.

R. L. Crawford, President

Editorials

THE AMA NEWS

A new publication by the American Medical Association which represents an effort to keep information current and fresh for the many members of the Association appeared in September and is to continue as a regular service of the A.M.A. This tabloid-type paper is to carry a variety of material, news of people, new developments, some advertising, cartoons, editorials, etc., etc. This material is presented in a reasonably popular form and covers a wide range of interests.

The *News* has had several predecessors which have aimed at somewhat the same kind of approach, and they have been received kindly, some of them even enthusiastically, by medical readers. Their standards have been quite high and their material is in readable form. It seems sure that the A.M.A. *News* will be a very satisfactory addition to the already available medical newspapers, and with the high standard of production always visible in a journal of the A.M.A., it is to be expected that it will continue to be a very desirable production.

THE NATIONAL FOUNDATION

Having labored valiantly over the years in the field of poliomyelitis, and having achieved through the success of the Salk vaccine a large measure of success in the control of the disease, The National Foundation for Infantile Paralysis has taken stock of itself and decided that since it has to a large extent attained its original objective and since demands on it from poliomyelitis alone should be less and less, it must turn to new fields of endeavor. It does not now abandon anything except that part which poliomyelitis played in its name, and intends to continue with its activities against that disease. This announcement, in the rather characteristic dramatic approach of the Foundation, was made on a closed television circuit to specially invited audiences over the country, and was amplified in a soul-searching booklet distributed to a rather large medical audience.

Now that polio is declining, or at least paralytic polio is declining, and the value of the vaccine has been established, even though it is poorly utilized, the Foundation, having built a huge structure of education, research and fund raising must find new fields, new appeals and new subjects. On the basis of a decision by many wise people, the Foundation plans to attack as its basic objective the great problem of arthritis, and to add as a new field the rather small one covering spina bifida, hydrocephalus, and the encephalocoele group, all composing a relatively minor group as far as services are concerned, but a group with a tremendous potential of emotional appeal to the public for its contributions of funds.

The Foundation has a most effective organization for procuring funds. Actually in the past, the take has at times been so big that the Foundation has appeared to be rather hard put to find projects remotely bearing on polio on which to spend its money. There can be no complaint about successful fund-raising campaigns, unless one might question whether the donors of the dimes would really be content with some of the ways in which their funds were used.

It is to be hoped that the top level policy makers will be given the light to follow the main courses and not give too much stage dressing or fritter away money given with specific objectives in the mind of the man in the street when he deposits his money in the little box. In giving, as in taking, the dimes should march, not sprint.

There has been some unfortunate conflict with the Arthritis and Rheumatism Foundation, a well established organization which has had ten years of activity and collected as much as three million dollars in 1957-58 through its 53 Chapters scattered over the country. There was an effort to bring about a merger of activity and funds with this organization, but

the decision was reached that this Foundation would continue along its own way. One of the chief matters of contention appeared to be the fact that the policy of the National Foundation was derived from a central organization, while the Arthritis and Rheumatism Foundation allowed its Chapters a great deal of local autonomy. To the latter arrangement we would feel kindly inclined rather than to the "new-dealish" attitude of the National Foundation. It is hoped that an amicable solution can be reached in the differences between these two active bodies. It may be imagined that there may be some lack of cordiality of feeling since the National Foundation appears to have proposed that the ten year old Arthritis and Rheumatism Foundation give up its activities, disband, and leave the field to the giant of voluntary agencies.

The expected continuation of the National Foundation as a successful fund raiser is not unpleasant to contemplate. It will represent a voluntary effort of millions of people over the country to do something in the field of medical research and medical care which is not readily available from other sources. It is quite likely that additional projects may be included, and unimagined benefits may accrue to all of us.

THE FAMILY PHYSICIAN

Periodically the medical muezzin from his ivory minaret (or is it plastic?) calls aloud the decline of the family physician and the rise of the institutional practitioner. Periodically he asks the gifts of the public (by way of the many foundations) to bear him along in his research-practice, and cautions us to beware of the deficiencies of the doctor on the street.

If he is right, a survey* made three years ago, but probably still quite current in its implication, does not bear him out entirely. The report of this survey begins thus; "Despite the increasing importance of specialists, the family physician remains a key figure in modern medical practice. He is medical adviser and manager for the overwhelming majority of our population, and for many he remains the sole point of contact with the medical profession. As a result, he is the single physician most likely to influence the public's conception of medical practice."

The survey, made by sampling over all the areas of the country, in both small and large communities, showed that most of the family physicians are relatively young men (in or below their forties), and that the younger physicians are generally concentrated in smaller communities. Nearly three fourths do general practice in the usual sense. They work 60 hours a week, and make (as a median figure) about $15,000 a year before taxes.

The day of the house call has evidently not gone, as 13 out of 14 of these doctors made calls at patients homes, and 4 out of 5 made calls at night and on Sundays. Seven out of 8 were affiliated with one or more hospitals. The average physician saw 26 patients a day, mostly in his office.

The material gain of the practicing physician has been sometimes a point of envy for the institutional practitioner, who may be dazzled by the large incomes of such relatively rare medical financial genius as the neurological surgeon, for instance, may display. The figures of this survey may mollify his envy, if indeed he does not reckon the smaller demands on his time and effort.

The focal point of medical care has not shifted. Four out of five families employ a family physician, who is all too happy to have the expert in the institution to ease doctor and patient over the hard spots by his superior specialized knowledge.

*Progress in Health Services 8: June 1958.

NEWS

WASHINGTON NEWS

When the Congress that is elected in November goes to work next January 7 it will have before it a half dozen important health-medical issues that the last Congress took some interest in but didn't resolve. They include hospitalization under social security, tax-deferment on annuities, loans and mortgage guarantees for hospitals and nursing homes, aid to medical schools and amendment of Veterans Administration's hospitalization procedures.

The issue of hospitalization under social security—the Forand bill principle—will come into the spotlight shortly after the new session starts. Under instructions from the House Ways and Means Com-

mittee, the Department of Health, Education, and Welfare will complete a study on the problems of financing hospital care for the aged before next February 1. Some study of medical costs may also be included.

Decision to move ahead with a study of medical care costs for the aged was reached by the committee at the same time it excluded the Forand idea from the social security bill enacted during the summer. HEW was told to pay particular attention to the possibility of increasing OASI taxes, and with the money purchasing health insurance (nonprofit or commercial) to take effect upon retirement or disability. This would differ from the Forand plan in that health care would be financed through insurance, and not paid for directly by the Federal government.

The Keogh bill to allow doctors and other self-employed to defer income taxes on money put into retirement funds passed the House with very little opposition but encountered difficulty in the Senate. It was defeated there in the closing days, and under unusual circumstancts. Policy committees of both parties decided to oppose the bill as too costly, and the vote came in the course of a complicated legislative maneuver that could not be used as a test of whether individual Senators favored or opposed the bill itself.

Keogh bill sponsors, however, are encouraged that 32 Senators resisted official party instructions and stayed with the pension plan. They are confident that next year under more favorable legislative circumstances the measure will clear the Senate.

An effort was made late in the session to authorize grants to medical schools for building and equipping teaching as well as research facilities. The bill extending the research grants program also would have allowed use of the grants for "multi-purpose" structures (teaching and research) if emphasis were on research. However, for fear this change would hold up the simple extension bill, it was dropped off before the bill reached the House floor. Sponsors of aid to medical education will be back next year and campaign on this issue alone.

Legislation for U. S. guarantee of nursing home mortgages, strongly supported by the American Medical Association, fell by the wayside in the House during the closing hours of the session, after having cleared the Senate with no trouble whatever. This also will be pushed next year, and may have a better chance of passage because of the growing emphasis on need for solving the problems of the aged.

Far too late for passage, Chairman Olin Teague's House Veterans Affairs Committee reported out a bill that would make a number of changes in VA hospitalization procedures, liberalizing some and tightening up on others. The bill also would require VA to open 5,000 beds over which Mr. Teague and VA Administrator Whittier have been squabbling for months, the latter maintaining that the beds aren't needed. That issue still is unresolved, inasmuch as the bill didn't pass.

Congress did roll out a sizeable list of medical-health laws. It ordered the calling of a 1961 White House Conference on the Aging, gave food and Drug Administration authority to enforce its pre-testing standards on foods to which chemicals and other substances have been added, authorized loans as well as grants under the Hill-Burton program, authorized grants for the country's schools of public health and for civil defense purposes, raised military and VA physicians' pay, and required labor and management health and welfare plans to make reports and open up their books for inspection by members.

American Medical Association was able to persuade the Department of Defense and the administration to retain the post of Assistant Secretary (health and medical) in the reorganization of the department. In legislation passed by Congress to bring about the reorganization, one of the assistant secretary posts would have been eliminated, and the medical assistant was marked for down-grading. However, Secretary McElroy eventually announced that the position would be continued.

Even before Congress adjourned, it was clear that trouble was in sight for Medicare because of inadequate appropriations and instructions from Congress not to exceed the appropriation. To keep within the limitation, if possible, Defense Department was channelling many thousands of service families to military facilities, and at the same time limiting the scope of care permitted in civilian facilities.

DR. STRICKLAND HONORED

Dr. W. A. Strickland, beloved Oconee county physician who has been practicing in Westminster for 51 years, was honored September 2 at the Selective Service Board office in Walhalla.

He was awarded a certificate of appreciation in recognition of 15 years of faithful service to Local Board No. 37 as medical adviser.

Dr. Strickland was invited to the board office where a letter from Lt. Col. James Hunter, State Selective Service director, was read by Sam F. Reeder, a member of the Local Board. Board Chairman W. H. Bolt presented the certificate and a 15-year service pin.

DOCTORS, LAWYERS TOLD ABOUT JOINT PROBLEMS

The director of the law department of the American Medical Association urged better relations between the medical and legal professions in a speech to a gathering of Pee Dee doctors and lawyers on October 18.

C. Joseph Stetler said the two professions have come to recognize that the administration of justice is a joint undertaking. "The difference is in technique—the lawyer attempting to maintain his position by argument and contention and the doctor demanding

a full and frank discussion of all the facts before making a judgment, with reference to illness," he said.

The lawyer has to recognize that the medical profession is a busy one and should arrange for the doctor to spend as little time as possible in the courtroom, he said.

Stetler pointed out that 65 to 80 per cent of all litigation in today's courts require some type of medical reports or testimony and that seven out of ten personal injury cases are decided on medical rather than legal considerations.

"It is appalling to note the unprofessional and unethical action of the few doctors who have become 'professional witnesses' for the plaintiff and defense counsel." Stetler declared. He urged concerted action to eliminate "this new medical specialty."

PEDIATRICIANS INSTALL DR. CASTLES

Installation of new officers of the South Carolina Pediatric Society took place at the Hotel Columbia, following the annual meeting of the society, September 9.

Dr. C. Guy Castles of Columbia took over as president, succeeding Dr. Fred Adams of Spartanburg. Dr. C. H. Zemp of Camden became vice president, replacing Dr. Castles, and Dr. Kenneth Herbert of Charleston became secretary-treasurer, replacing Dr. Zemp.

Special guests at the meeting were Dr. James C. Overall, clinical professor of pediatrics at Vanderbilt University and president-elect of the American Academy of Pediatrics; and Dr. Victor C. Vaughn, III, professor of pediatrics at the Medical College of Georgia.

Other speakers who addressed the convention were Dr. J. I. Waring of Charleston, on "Dysglobulinemia, Case Report On a Child"; and Dr. J. W. Rhodes of Charleston, on "Mumps—Meningo Encephalitis."

DIRECTOR IS NAMED FOR MENTAL CLINIC

Appointment of Dr. H. W. Herbert as clinical director of the Darlington-Florence Mental Health Clinic was announced by Dr. W. P. Beckman, state director of mental health.

Dr. Beckman said that Dr. Herbert would assume his duties on January 1. He will serve as a full-time psychiatrist for the institution, which now is located in Florence and which is expected to move to a site midway between the county seats of Darlington and Florence, near the Tuberculosis Sanatorium.

LeRoy M. Want of Darlington and the Rev. Joseph R. Horn, III of Florence, chairman and vice-chairman, respectively, of the clinic's advisory board, predicted that assumption by Dr. Herbert of his new duties would make the mental health center of even greater value to the two counties. They said that the center hoped to add additional trained personnel from time to time. Plans are for a $100,000 center off the Florence-Darlington Highway.

Dr. Herbert was formerly in general practice at Florence, for 19 years. He is now finishing his residence in psychiatry at the University of Virginia Hospital, in Charlottesville. His recent work has included the fields of adult, child and general psychology and neurology.

Between October 15 and January 1, Dr. Herbert will spend some time at Letchworth Village, outstanding training center for mentally retarded children, in New York state.

THE MONTH IN WASHINGTON

For many years a number of students of government have been searching for some way of checking the growth of the Federal bureaucracy and returning certain functions to the states.

Two particularly vexing problems are involved. Because the Federal government has moved into so many taxation areas, states complain that even if they wanted to regain control over certain programs, they would have no way of paying for them. Also, a foolproof mechanism would have to be devised to insure that the programs didn't break down during the transition and that the states would in fact keep up the activities ofter U. S. dollars stopped coming.

If the administrative details could be worked out, and if Congress would agree to reverse the trend, a number of U. S. Public Health Service grants programs presumably could be turned over to the states.

President Eisenhower is deeply interested in attempting to turn the tide, and last year the Administration came up with a concrete proposal. It was to make the states completely responsible for the water pollution control operation ($50 million annually in U. S. grants) and vocational education ($35 million a year). So the state would have money to finance the work, the U. S. would drop part of its tax on telephone service, inviting the states to levy their own tax.

Congress was cool to the idea. Besides, after giving it more consideration, the then Secretary Folsom of HEW decided it wouldn't work because the low-income states couldn't realize enough from the telephone tax to meet the extra expenses.

But the Administration hasn't given up hope. Supported by the federal-state joint action committee, Secretary Flemming (Folsom's successor) is proposing a new method, one that he thinks will meet the problem of the low income states.

He would shift to the states the same two programs—water pollution control and vocational education. At the same time the U. S. would forego 30% of the present tax it imposes on telephone service and permit the states to levy this amount. In addition, to take care of the poor states the U. S. would allocate among states an amount equal to 10% of the present telephone tax, distributing relatively larger shares to the low per capita income states.

In dollars, as explained by Secretary Flemming, the states would be losing $85 million in U. S. grants, but they would have an opportunity to collect a total of about $109 million on telephone service and receive $36 million in the new grant arrangement.

In announcing that the Administration was going to try again to have this idea adopted, Mr. Flemming emphasized that both programs were of great value and shouldn't be allowed to "drop through the cracks in the floor" during the period of transition. He noted that under his proposal the U. S. could step in and make a state use the money for the specific purpose if it showed an inclination to collect the tax but spend the money somewhere else.

The question now is whether Congress will show any enthusiasm over the plan. At any rate, it will be opposed vigorously by the telephone industry and vocational education interests. The latter are fearful that their programs might suffer under all-state operation.

DR. WILSON WILL HEAD G. P. PHYSICIANS

The South Carolina chapter of the American Academy of General Practice concluded its 10th annual scientific assembly with the election of Dr. I. Ripon Wilson, Jr. of Charleston as president.

Dr. Wilson succeeds Dr. Homer M. Eargle of Orangeburg.

Other officers elected at the two-day meeting were Dr. William T. Hendrix of Spartanburg, president-elect; and Dr. William A. Stuckey of Sumter, vice-president.

Re-elected were Dr. Horace M. Whitworth, Greenville, secretary-treasurer; and Mrs. Inez C. Lytle, Greenville, executive secretary.

Three new directors were named for three year terms. They are Dr. A. Richard Johnston, St. George; Dr. Frank C. Owens, Columbia, and Dr. Robert Quinn, Georgetown.

Dr. Charles N. Wyatt, Greenville, and Dr. Harold E. Jervey, Jr., Columbia, were re-elected delegates to the congress of AAGP.

The group decided to hold its 1959 meeting October 11-12, at Clemson.

One of the recent additions to the Columbia profession is Dr. James F. Adams.

Dr. Adams is associated in the practice of radiology with Dr. T. A. Pitts.

Dr. Adams is a native Georgian. He earned an A. B. from Emory University and an M. D. from the Medical College of Georgia. Dr. Adams interned and took his fellowship in radiology at Charity Hospital of Louisiana in New Orleans. He is a diplomate of the American Board of Radiology.

They will supply the radiological departments of the Baptist and Providence Hospitals and the State Hospital for mentally ill.

DR. CRAWFORD ADDRESSES AUXILIARY

"Medical men should not only keep well informed as to political actions but should be active participants in politics and public affairs," Dr. R. L. Crawford of Lancaster told a statewide gathering of medical men's wives in Charleston on October 2.

Dr. Crawford, president of the South Carolina Medical Association, was guest speaker at the luncheon meeting held by the Woman's Auxiliary to the South Carolina Medical Association.

Speaking on the topic, "Doctors In Politics And Public Affairs" he discussed the socialistic trends in medical fields abroad and warned of similar trends in the states. He declared that Medical Associations and their Auxiliaries should not only keep informed as to the progress of the Forand bill in the coming session of Congress but should take an active stand on some of its provisions.

Dr. Crawford also told the Auxiliary that the South Carolina Medical Association had received awards in both 1957 and 1958 for contributions to the American Medical Education Foundation. The AMEF was established in 1951 by the AMA, he said, to raise funds within the medical profession for the medical schools.

Mrs. George H. Orvin, Auxiliary president, conducted the business session which preceded the luncheon meeting. Mrs. W. D. Workman, immediate past president, of Woodruff, was elected as nominating committee chairman, with Mrs. E. Gordon Able, Newberry, and Mrs. E. Benton Burns, Sumter, named as committee members.

S. C. CHAPTER OF PUBLIC HEALTH PHYSICIANS ORGANIZED

The South Carolina Chapter of the American Association of Public Health Physicians was organized and a constitution and by-laws were adopted on September 8 when 21 physicians became charter members. It is expected that 8 or 10 additional members will join soon.

The objectives of the organization are to promote better public health in South Carolina through better informed and better trained health officers, through the exchange of ideas and techniques among health officers, and through discussion of mutual health-officer-problems leading toward their solution.

The South Carolina chapter is an organization of physicians who are in full-time public health work in the state, county, or city health departments. Physicians who are part-time health officers in city, county, or state health departments may become associate members. Physicians in full-time employment with the national health organization and who are assigned to South Carolina for a period of duty may become members. The organization will meet 4 times a year.

Officers elected for the first year are Dr. John M. Preston, president; Dr. F. L. Geiger, vice-president; and Dr. G. E. McDaniel, secretary and treasurer.

COLLETON BOARD APPROVES PLANS FOR HOSPITAL

At a recent meeting the Colleton County Hospital Board accepted tentative plans for a 50-bed addition to the hospital. Plans, drawn by John H. Truluck, local architect, have been forwarded to Columbia for approval.

A request was made by the board for an addition of beds due to the crowded condition of the hospital. The county delegation agreed to this, provided taxes were not raised.

A wing will be built to the north of the present emergency entrance that will take care of the X-Ray equipment and dark room; also a class room.

The present X-Ray department rooms will be used by the laboratory which will double its size.

A two-story wing will be constructed on the south end of the present building. The first floor of this will be used for a maternity ward and the second for medical and surgical patients.

There will be a 10-bed addition to the present Negro ward.

DR. BLACKMON OPENS OFFICE

Lyndell W. Blackmon, M. D., has opened an office for the practice of Ophthalmology at 1420 Lady St.

Dr. Blackmon attended Columbia City Schools and the University of South Carolina prior to World War II, served a a parachutist with the 82nd Airborne Division in Europe.

He attended the Medical College of South Carolina following his discharge from service and was graduated in 1950. After internship at Roper Hospital in Charleston, 1950-51, he practiced general medicine in Enoree, until 1955.

He took specialized training in diseases and surgery of the eye in the Tulane University School of Graduate Medicine and the New Orleans Eye, Ear, Nose, and Throat Hospital from 1955 to 1958, and took additional training in eye surgery at the Confederate Memorial Center in Shreveport, La.

He has also attended the Lancaster Courses in Ophthalmology at Colby College in Waterville, Me.

GROUP NAMES DR. F. R. PRICE

Dr. F. Raymond Price of Charleston has been elected president of the South Carolina Opthalmology and Otolaryngology Society.

The election took place September 16 in Asheville, N. C., at a convention of eye, ear, nose and throat societies of North and South Carolina.

Other new officers include Dr. Robert E. Livingston of Newberry, vice president; Dr. Roderick MacDonald of Rock Hill, secretary and treasurer; and Dr. L. D. Lide of Florence, president-elect.

DR. ALTMAN OPENS ST. GEORGE OFFICE

Dr. James L. Altman has opened an office for the general practice of medicine in the Judy building on Main Street, St. George.

A native of Charleston, Dr. Altman is a graduate of the Medical College of South Carolina. He attended The Citadel one year and graduated from the University of South Carolina, where he took postgraduate work in psychology. He interned at the Regional Hospital in Orangeburg.

Dr. Altman served from 1941 to 1945 in the U. S. Navy, two years of which time were spent in Russia. He was also stationed in the Mediterranean area for sometime.

"I'll Have To Have Your Complete Case History. How Much Were You Paying Doctor Watkins?"

ANNOUNCEMENTS

A. M. A.
CLINICAL MEETING
MINNEAPOLIS, MINNESOTA
DECEMBER 2-5, 1958

BAHAMAS CONFERENCES

Serendipity—Peace of Mind—Not to have to watch the clock: Nassau.

This coming winter, there will be three Conferences: The Sixth Bahamas Medical Conference, November 28th until December 18th; The First Bahamas Surgical Conference, December 29th until January 17th; The Serendipity Session, January 18th until January 31st, 1959.

The British Colonial Hotel where all sessions will be held, has made it possible for participants and their parties to avail themselves of the facilities of the fully redecorated hotel at reduced rates, PROVIDED THAT RESERVATIONS ARE MADE BY WRITING DIRECTLY TO BAHAMAS CONFERENCES, P. O. Box 4037, Fort Lauderdale, Florida, Telephone Jackson 3-7303 at Fort Lauderdale, Florida, and NOT through agents.

DEATHS

DR. WILLIAM U. GUNN

Dr. William U. Gunn, 38, clinical director of Whitten Village in Clinton, died September 16 at Self Memorial Hospital in Greenwood after a few days illness.

Dr. Gunn, a native of Harlan, Ky., was a graduate of the University of Kentucky, and the University of Kentucky Medical School. He was associated with hospitals at Orlando, Fla., New Orleans, La., and Lexington, Ky., before coming to Whitten Village.

DR. W. H. CHAPMAN

Dr. William Herbert Chapman, 77, of Whitney, died at his home September 24 after a long illness.

Dr. Chapman was Spartanburg County's Doctor of the Year in 1950. He had practiced medicine in Whitney and surrounding areas for approximately 50 years.

INFORMATION
U. S. ATOMIC ENERGY COMMISSION RADIOLOGICAL ASSISTANCE PLAN

POINT OF CONTACT: In the event of an incident involving radioactive materials, IMMEDIATELY contact the:

U. S. Atomic Energy Commission
Savannah River Operations Office
Aiken, South Carolina
Augusta, Georgia
4-6372, Ext. 3333
or
Aiken, South Carolina
9-6211, Ext. 3333
Call collect, if necessary

POSSIBLE INCIDENTS: In your state, incidents involving radioactive material will almost without exception arise from one of two sources.

1. Material being transported within or across the state by either motor freight, railroad or airplane.
   Regulations require that trucks and railroad cars transporting radioactive material bear a placard denoting the presence of hazardous materials. Also, all packages containing radioactive material, including those shipped by air, are appropriately labeled to denote the contents are radioactive.
2. *AEC Licensees.* These are laboratories, hospitals, colleges, private firms and individuals licensed by AEC to receive, store and use radioactive material.

AEC ASSISTANCE TEAM: A team of radiological assistance specialists stands ready, 24 hours a day, to respond to any request for assistance. The team is comprised of radiation monitoring experts, radiation-trained doctors, and public relations specialists, under the direction of a key AEC official. Equipped with radiation monitoring and detection instruments, clean-up equipment, protective clothing, walkie-talkies, etc., the team can move out on short notice, by commercial or charter aircraft if necessary, to the location of any incident that might occur in your state.

PROMPT NOTIFICATION: The key to the AEC Assistance Team being able to do its job on any radiation-connected emergency is PROMPT NOTIFICATION. The first state, county, or municipal official on the scene should IMMEDIATELY telephone the AEC Assistance Team at one of the numbers listed above.

AEC-RECOMMENDED PROCEDURES FOR USE BY LOCAL AUTHORITIES IN DEALING WITH INCIDENTS INVOLVING RADIOACTIVE MATERIALS

If radioactive materials are involved in incidents causing their spillage or release:

1. Notify immediately the Savannah River Operations Office of the Atomic Energy Commission. The telephone number is Aiken, S. C., 9-6211, Ext. 3333; or Augusta, Ga., 4-6372, Ext. 3333.
2. If any person is alive and trapped in wreckage, make every effort possible to rescue him.

If immediate actions in the involved area are necessary for the preservation of life and health, minimum contact with the radioactive materials by emergency personnel may be allowed if you observe the following precautions:

1. Restrict area of accident. Keep public as far from scene as practical. Souvenir collection should be forbidden.
2. Segregate and retain those who have had possible contact with the radioactive material until they can be examined further. Obtain names and addresses of those involved.
3. Remove injured from area of accident with as little contact as possible and hold at a transfer point. Take any measures necessary to save life, but carry out as *minimal* first-aid and surgical procedures as possible until help is obtained from radiological team physicians or other physicians familiar with radiation medicine. DO NOT take injured to local hospital or doctor's office unless certain that he is not contaminated with radioactivity.
4. In incidents involving fire, fight fires from upwind as far as possible, keeping out of any smoke, or dust arising from the accident. Treat the fire as you would one involving toxic chemicals. Do not handle

suspected material until it has been monitored and released by monitoring personnel. Segregate clothing and tools used at fire until they can be checked by radiological emergency teams.

5. In the event of a radiological incident involving a vehicle accident, detour all traffic around scene of accident. If not possible, move vehicle shortest distance necessary to clear right of way. If radioactive material is spilled, prevent passage through area unless absolutely necessary. If right of way must be cleared before AEC radiological assistance arrives, wash spillage to shoulders of right of way with minimum dispersal of wash water.
6. Do not eat, drink or smoke in the area. Do not use food or drinking water that may have been in contact with material from the accident.
7. Take only the minimum, necessary steps prior to the arrival of radiation specialists and physicians.

Experiences With Some Common Mammalian Bites. Karl M. Lippert (Columbia) Tri-State M. J. 6:16 Aug. 1958.

Evolution from rural to urban life and mechanization has diminished usual contacts between man and other mammals. When man is bitten by man or by an animal, infection in the wound is the most likely sequel. Although each mammal bite may have peculiar characteristics, the basic principal in the treatment consists of intensive washings with soap and water, debridement, and simple gauze dressing. Delayed wound closure in most instances is advisable. Although many bacterial organimss have been found in various bite wounds, it appears that the infrequently cultured Pasteurella family are the significant organisms to be found in this type of wound infection. The wide distribution of Pasteurella in mammals was presented in chart form with notes on the appearance and cultural characteristics of this bacterial family.

WOMAN'S AUXILIARY
SOUTH CAROLINA MEDICAL ASSOCIATION

President: Mrs. George Orvin, Charleston, S. C. **Corresponding Secretary: Mrs. John Cuttino, Charleston, S .C.**

The Fall Board Meeting of the Woman's Auxiliary was held in Charleston, October 2, 1958 at the Fort Sumter Hotel. The meeting was conducted by Mrs. George H. Orvin, President, and after the business session Dr. R. L. Crawford, President of the S. C. Medical Association talked to the ladies on "Doctors in Politics and Public Affairs."

Dr. Crawford brought to the attention of the wives that they and their doctor husbands should be aware of what legislative bills were passed and what were not. He placed particular emphasis on progress of the Forand Bill in the coming session of Congress. He discussed the Socialistic trends in medical fields abroad and warned of similar trends in the states. Dr. Crawford also told the Auxiliary that the South Carolina Medical Association had received awards both in 1957 and 1958 for contributions to the American Medical Education Foundation. The AMEF was established in 1951 by the A.M.A. to raise funds within the medical profession for the medical schools. Industry had been contributing to colleges and medical schools for sometime, and the physicians felt it time that they take on their share of the responsibility. In this light he asked that the doctor's wives encourage their men to give to A.M.E.F.

Mrs. Orvin has selected the AMEF as the Auxiliary's main project for the year. Through "In Memoriam" and "In Appreciation" giving AMEF could be greatly benefitted. Also, Mrs. Orvin has secured several clever ideas to pry loose the pennies. Along with the usual raffles and donations there is one idea to assess everyone a certain coin or two per pound weight. That should bring interesting results. With it all, and each county auxiliary's plan for AMEF, the results at the end of the year should be astounding.

There has been a great deal of work on Nurse Recruitment in the last few years. The doctor's wives have assisted the nursing schools throughout the state in preparing and presenting information about the nursing schools and nursing as a career to the high school students in South Carolina. The Future Nurses Clubs have been organized and sponsored by the Auxiliary. Last year 200 girls attended the two day Future Nurses Club Rally held at Winthrop College. The Medical Auxiliary has done a great service to the hospitals and nursing schools in this state. At this time there are few schools that do not have their quota of student nurses. The Future Nurses Club Rally at Winthrop in February, 1959 will be handled by Mrs. Max Culp, Fort Mills, S. C.

Another project of the Auxiliary is the Student Loan Fund established to assist financially the men and women who wish to receive their medical education in South Carolina. Safety, Civil Defense, and Mental Health are self explanatory. Each auxiliary member is made aware of the necessity of understanding and working for the betterment of safety, civil defense and mental health.

Attending the Board Meeting in Charleston, were the county presidents, past presidents, and members of the Executive Board.

Lucia C. Heins

THE OFFICIAL SEAL OF THE SOUTH CAROLINA MEDICAL ASSOCIATION

PRESENT SEAL

SUGGESTED SEAL
Designed by
Mrs. Hal Powe, Jr.
Greenville

WHICH DO YOU PREFER?

BOOK REVIEWS

INTERNATIONAL SOCIETY OF HEMATOLOGY. Grune and Stratton Company; New York, 919 pages; 1958. Price $25.00.

This is the sixth volume in a series covering the meetings of the International Society of Hematology and is a review of the papers presented at the 1956 meeting in Boston. It has been ably edited with the inclusion of either abstracts or complete papers of 370 contributors.

The subdivisions of leukemia, nucleonics, spleen and hypersplenism, hemorrhagic disorders, anemia, immunohematology, and miscellaneous are covered with an excellent review of the basic research in progress as well as the clinical applicability. The increased significance of radio-active methods in the study of the red cell is emphasized as well as the deleterious effect of radiation to the hemopoetic system. Although much of the material loses its value in being published two years after presentation, it still gives an excellent source of reference for the newer developments in hematology.

This volume is a necessity for every hematologist or hematological laboratory and should be available for inspection by all practitioners.

Charlton DeSaussure, M. D.

THE PSYCHOLOGY OF MEDICAL PRACTICE, by Mark H. Hollander, M. D., W. B. Saunders Company, 1958. Price $6.50.

This monograph consisting of 262 pages of text, with an excellent subject index, has been produced by Dr. Mark H. Hollander in collaboration with Dr. Leonard A. Stein, Assistant Professor of Clinical Medicine, Chicago Medical School; Dr. Ernest M. Solomon, Instructor, Department of Obstetrics and Gynecology, Northwestern University Medical School, and Dr. Julius B. Richmond, Professor and Chairman of the Department of Pediatrics of the State University of New York, Upstate Medical Center, Syracuse, New York.

Dr. Hollander and his collaborators have attempted to turn a psychological spotlight on the patient, the physician, and the medical situation in regard to problems encountered in the everyday practice of medicine, and to suggest some approaches in the management of these situations. Dr. Hollander shifts his emphasis from a consideration of conscious difficulties which can be understood at a commonsense level to unconscious problems which the author treats in the framework of the psycho-analytical type of approach. It is an attempt to provide a book which may give a clue to some understanding of the so-called "doctor-patient relationship" and to verbalize some of the thoughts which he and others have had concerning the "art of medicine" as distinct from the "science of medicine".

The contents are presented in distinct sections by chapters, and cover the doctor-patient relationship, some thoughts concerning the management of medical patients, patients with carcinoma, patients undergoing surgical treatment, obstetrical patients, problems related to the care of children in health and in disease and with their families under both circumstances, and psychological considerations in the use of medications, and a section on non-medicinal prescriptions.

The problems covered are of commonplace occurrence and certainly merit consideration and thought, not only as a means of awakening ideas of this sort in the minds of a busy medical student or house officer or beginning practitioner, but also the perusal of a volume of this sort is of value to one already established in practice from the standpoint of letting him re-think and remember how he himself may have handled some of these very frequently encountered and often highly emotionally charged areas in the field of medical practice in general.

Some may find areas of disagreement with the various approaches presented, and certainly it would be beyond the realm of human endeavor to write a perfect book of this sort, but in these pages one will find thought-provoking and soul-searching questions which should help the neophyte in medicine to develop patience with patients and their families, and serve to enrich the more philosophically inclined in the older, established practitioner group who may peruse its pages.

In general, one may sum up the situations of the doctor-patient relationship as presented in this small volume as pointing out that there are areas in medical practice where scientific knowledge permits a doctor to give straightforward, dogmatic guidance based on medical knowledge. In other areas guidance will be based on moral and religious foundations, and in other areas the patient and the family are to be helped in their thinking so that they realize the decisions which they have reached are of their own choosing and arrived at as wisely as they themselves can achieve them.

Dr. Hollander's thoughts may be summed up in not only "know thyself" but even more one must know the patient more than superficially.

Vince Moseley, M. D.

THE OPERATIONS OF GENERAL SURGERY. G. A. Higgins and T. G. Orr. W. B. Saunders Company, Philadelphia. 1958. Price $20.00.

This is a one volume work covering the field of general surgery in the broad sense of the term. It gives in a clear outline fashion established techniques for operations upon the abdominal and thoracic cavities and the head and neck. Cardiac and pulmonary surgery are included. The text is well supported by excellent illustrations. The purpose of the operation is stated and physiologic and pathologic considerations are briefly but clearly given. It should serve as a valuable reference for internists, general practitioners, and students who wish to obtain a knowledge of the application of surgical procedures to the various diseases. The technical descriptions are clear and sufficiently complete to be of great assistance to the general surgeon.

Dr. T. G. Orr, the author of the first two editions, died shortly after he had begun work on the third edition. The revision was completed by Dr. George H. Higgins and Dr. Thomas G. Orr, Jr.

William H. Prioleau, M. D.

PROGRESS IN PSYCHOTHERAPY. Volume 3, Techniques of Psychotherapy. Edited by: Jules H. Masserman, M. D. and J. L. Moreno, M. D. 310 pages. Grune and Stratton, New York—Cost: $8.50.

In 1954, the first organized meeting of the Section on Psychotherapy of the American Psychiatric Association took place in St. Louis. This Section presented a program at the next annual meeting of the A. P. A., in 1955, and subsequently, it was decided to publish the proceedings of the Section on Psychotherapy. In addition, the volume published would contain contributions not necessarily presented at the Section's meeting. Further, the editors would invite psychiatric leaders in certain foreign countries to contribute surveys of psychotherapy in their countries. Thus, the volume was meant to present an annual survey of the world situation in psychotherapy.

The present volume is the third presentation of *Progress in Psychotherapy;* Dr. Masserman is co-editor of this volume. Dr. Moreno has been one of the co-editors since the publication's inception.

This volume is separated into five major parts: I. History (of psychotherapy). II. Rationale and Methods. III. Special Techniques. IV. Psycho-pharmacology. V. Developments Abroad.

The wide variety of techniques described and the summary nature of the presentations make this an excellent source book for a perspective view of the field of psychotherapy but it certainly cannot be used as a textbook for any of the specific techniques described.

when psychic symptoms distort the picture

Dartal helps the patient reintegrate his mental processes

In everyday office practice as well as under hospital conditions Dartal is consistent in its effects as few tranquilizers are.

Dartal promotes emotional balance

Dartal effectively decreases or relieves emotional hyperactivity and psychomotor excitement.

Dartal is unusually safe

At a recent symposium, leading hepatologists* concluded that Dartal is not icterogenic or hepatotoxic.

Dartal is effective at low dosage

One 2-mg. tablet q.i.d. or one 5-mg. tablet t.i.d. in neuroses; one 10-mg. tablet t.i.d. in psychoses.

a superior psychochemical
for the management of both major and minor emotional disturbances

Dartal®

dihydrochloride — brand of thiopropazate dihydrochloride

*A Symposium on the Pharmacologic Effects of Dartal on the Liver, Chicago, Searle Research Laboratories, Feb. 7, 1958.

Doctors are generally agreed that the best hope of saving lives from cancer is early detection and prompt, proper treatment. Great progress has been made in the last ten years: the saving now of 1 in 3 compared with 1 in 4, as more and more people are seeing their doctors **in time.**

But with present knowledge and existing facilities, it is possible **today** to save **1 in 2** cancer patients. This is the target of the American Cancer Society's professional and public education programs.

The Society offers doctors a variety of free services: **Literature:** two bi-monthly magazines; **Films:** 200 available on loan, including a series of kinescope films covering practically every clinical phase of cancer; **Slides:** (In color) Characteristic early lesions in sites of greatest incidence; **Exhibits:** for medical meetings and conventions, on special aspects of diagnostic and therapeutic problems.

In its public education program, the Society uses every effective communication medium to urge people to have annual health checkups and to go to their doctors promptly at the appearance of a danger signal.

The challenge will be met. As more and more doctors' offices become "cancer detection centers," and as more and more people see their physicians regularly, the closer will come the day when half of our cancer patients will be saved. The know-how for saving the remaining half is still being sought in our research laboratories. Ultimately that challenge, too, will be met.

AMERICAN CANCER SOCIETY

Excellent summaries of a wide variety of special techniques are given. Among them are Music in Therapy, Group Interaction through Dance, Psychotherapy in Nursing, Psychiatry and the Ministry, Therapy of the Adolescent, Marriage Counseling and a particularly interesting presentation concerning the Family Group and Family Therapy. In this last, the long-recognized fact that the individual and his emotional illness cannot be separated from the complex, interacting relationships existing in his family group is highlighted. The placing of "the patient" into the larger perspective of the family group brings to light many dynamic forces which can be very useful (when properly understood and applied) in stabilizing a disturbed person. It is pointed out that families can be regarded as "patients," that families have a natural history, that families are dynamic, living things, that families vary as to their assets and liabilities and as to their adaptability to stresses. Further, there are families which are relatively "sick" and families that are relatively "healthy," emotionally speaking. Often, an understanding of the dynamics of a family can make it possible to utilize therapeutic forces within the family for healing effect on a "sick" member.

The therapeutic technique known as Psychodrama comes in for its share of exposition in this volume—perhaps more than its share. This latter seemed to me to be true of the preceding volumes as well. Perhaps this can be understood easily, since, in a sense, Psychodrama is fundamentally exhibitionistic anyway. Still, this "living, breathing" technique is such a refreshing change from certain stereotyped, frequently stultified, over-intellectualized, so-called "analytic" techniques that we can easily forgive its exhibitionism, as if exhibitionism needed to be forgiven at all—which it doesn't. But, don't try to read this book and then open up your psychodramatic workshop. In Dr. Moreno's hands or in the hands of therapists who have undergone training and preceptorship, I am convinced that it can probably frequently work near miracles in the favorable modification of emotional and behavior patterns. But, in any other hands, I am also convinced that beautiful and poignant reality and a work of art simply become just another bad play.

Naive users of "drug therapy" will get an eye opener in the comments referable to the psychological implications of administering medications, to anyone by anyone, anywhere, at any time. The next time you are convinced that a drug you gave a patient "helped" him, pause to reflect that the drug *may* have been the least important facet in the network of phenomena which brought about a favorable change in the patient. And don't try to "use psychology" to "fool" the patient into "thinking" he's "well." Don't forget, you can be "fooled," too, by drugs.

Russia is a country in which we are all interested today. The section in this book describing the status of psychotherapy in Russia is interesting. The flat statement is made that "the basis of all psychotherapeutic techniques is the same, namely, suggestion—whether in hypnosis, or during the natural state." In no uncertain terms, it is stated that Soviet psychiatry is based upon the principles laid down by Pavlov. "Freudianism" is rather summarily handled by stating that it "is explained as an effect of suggestion."

Running all through this book, although not often specifically stated, is the realization that very little, if anything is known about "how psychotherapy works." This fact need not dismay us, since the same is true of much larger a segment of medicine and surgery more often than it is false. Also, our non-psychiatric colleagues would, should they have to suddenly give up all their "empiric," "non-specific," "symptomatic," "supportive," etc. methods of therapy, find themselves "ridden out of town on a rail" by their suffering patients.

Lawson H. Bowling, M. D.

SCIENCE AND PSYCHOANALYSIS (Volume I, Integrative Studies) J. H. Masserman, M. D., Editor. 194 pages—Price $5.75. Grune & Stratton, Inc., New York 1958.

Two years ago an interesting development occurred in the psychoanalytic movement, when a new accrediting organization was established for psychoanalysts, called The American Academy of Psychoanalysis. This group consists of the schools of psychoanalytic thought and training known as the Ego Psychoanalysts. It was a culmination of a movement to counter the tendency for a new group of scientific endeavor to pre-empt themselves as an exclusive circle, which, in the words of the preface to this book, "tends after a period of inspiration and expansion to become obscured by dogmatism, incrusted with rituals or pre-empted by a reclusive circle of self-appointed hierarchs."

This book contains 76 articles by a variety of psychoanalysts from the various schools or those sympathetic with their ideals. It has attempted, in a very scholarly fashion, to open up the entire field of psychoanalysis, to have the medical profession made aware of the tremendous advances that have been going on, to enlarge the original ideas of Freud. It is not a vindictive polemic against Freud, but is based on the basic healthy attitude, "People are never really basically wrong—they merely never realize how far they haven't gone."

In other words, it attempts to demonstrate that the major contributions of Freud to the theory of practice of psychoanalysis originally started on very sound scientific and medical ground, but that many of his followers were unable to free themselves from theory and hypothesis, thereby stultifying further research and development in this very important field.

The breadth and scope of the various articles are such that it is difficult to summarize in a few words the theme of the book, except to say that the major

emphasis has been with developing and improving and extending the technique of psychoanalysis, which, after all, is our main function. The original basic technical developments by Freud remain unsurpassed today. The four pillars of psychoanalytic practice rest on:

1—Free association, which is the spontaneous penetration of unawared feelings.

2—The deciphering of the vast numbers of symbols in dreams—is the "via regia" to the real truth of ones feelings as represented in the unconscious.

3—The neurotic relationship of the patient to the analyst that soon appears in therapy, called "the transference phenomenon."

4—Resistance, the blocks and obstacles and sabotage efforts that the patient uses to prevent the analyst from seeing the patients real feelings.

The book basically starts on these premises and attempts to elaborate the various ways and means of the basic tools of psychoanalysis, without the unnecessary, unwieldy superstructure of pseudo-theories.

This book is particularly recommended for the entire medical profession since it is written in common sense terms, is highly readable, and represents a classic textbook in the growing literature of Ego Psychoanalysis.

Norton L. Williams, M. D.

OPHTHALMIC PLASTIC SURGERY (Second Revised Edition). Sidney A. Fox, M. D. Grune and Stratton, New York, 1958. Price $15.00.

It is the author's stated intent to write a practical book for the practitioner based on his own experience. He has done this honestly and well, stating the limitations of procedures as he has found them in his broad experience rather than portraying a few good results as typical.

In discussing the advantages of surgery over x-ray in the treatment of malignant growths of the lids, he lists five important points of superiority. With surgery one has a tissue diagnosis, a known margin of excision, better cosmetic and functional result, together with freedom from serious radiation effects such as conjunctival keratosis and the necessity of using extensive x-ray therapy for recurrences.

Most of the operative procedures recommended are standard but show the influence of personal experience and sound judgment. In several areas, however, the reviewer's opinions run counter to those of the author. Lateral displacement of the medial canthus usually requires a most firm attachment with wire sutures to the nasal bones rather than just to the periosteum in order to correct this defect permanently. In elevating a depressed globe, the author recommends a skin incision just below the orbital rim. Better concealment of this incision is made by placing it just below the free margin of the lid with no sacrifice in ease of approach. Although treating the subject of a depressed globe and methods of its elevation, no mention is made of the accompanying diplopia or its correction. His reconstruction of the lower lid could be much improved by utilizing a lateral cheek or temporal flap rather than by superior advancement of a cheek flap. For the replacement of the tarsal plate, he recommends preserved cartilage grafts. These are not reliable, frequently being absorbed by the host. Autogeneous auricular grafts taken from a properly selected area of the concha are much more dependable and are of excellent contour and are available in satisfactory quantity.

The author dismisses as a shibboleth the widespread misconception that skin grafts and mucosa in the same globeless socket lead to dire results.

In summary, this is a most complete and honest appraisal of ophthalmic plastic surgery and is well worthy of careful study by all interested in this field.

Robert F. Hagerty, M. D.

NEGROES AND MEDICINE—Dietrich C. Reitzes. Published for the Commonwealth Fund by Harvard Univ. Press. Cambridge 1958. Price $7.00.

This is an extensive survey covering 14 communities scattered over this country. It discusses negro applicants to medical schools, negro medical students, relation of negro hospitals to community patterns, integration and the approaches used to achieve it, and various other facets of the subject. Statistical studies are accompanied by much comment but no comprehensive conclusion. The book is a special contribution to a general field of discussion which is still in a state of turmoil.

J. I. W.

PROGRESS IN CARDIOVASCULAR DISEASES. Edited by Charles Friedburg, M. D. Grune & Stratton, Inc., New York. Subscription, $8.00 a year.

This is a new quarterly publication intended to contribute to postgraduate education in this field.

It is an excellent review of the advances in cardiac surgery. It will be of great interest to the cardiovascular specialist and probably the internist, but not to the general physician.

In view of the rapid advances in cardiovascular diseases and voluminous literature such a publication will aid to keep many abreast who are not near a large medical center.

P. Gazes, M. D.